EDITORIAL
DOMESTIC ENGINEERING

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PREPARING FOR PITTSBURGH.

NEWS comes from Pittsburgh that elaborate preparations are being made for the exhibit that will be held under the auspices of the National Association of Master Plumbers, when the annual meeting takes place next June. It will be truly national in its scope, and the people of Pittsburgh will have the opportunity of seeing, all under one roof—Motor Square Garden, the latest sanitary and heating equipment that makes the American nation the most comfortable in the world.

Pittsburgh, because of its location and accessibility, should draw an exceptionally large convention. It is many years since it was selected for a national meeting. Pittsburgh enjoys a large, loyal local association, and those who visit the Iron City will be able to learn how to build a successful local organization.

In view of the fact that the National Association is already giving attention to the forthcoming meeting, it is timely to suggest that the different states also consider how they can contribute to the success of that gathering. It is worth while to bring this up at state conventions for discussion. The question of membership is paramount. President Frank B. Lasette has asked for your cooperation. Are you giving it? Is your state conducting a membership campaign? Are **you** preparing for Pittsburgh?

There are many ways that you can help the National Association, and an ounce of action is worth a ton of indifference.

ATHLETICS IN INDUSTRY.

NOTHING is more commendable than encouraging athletics in industry. It is a development from which great good can be accomplished. Sound bodies beget clean minds. Workmen will work better if physically fit, and maximum efficiency was never more desirable than right now. And there is nothing in the realm of sport in which the men do not take an interest.

Industrial athletics is not an experiment but rather a tried and proven success. Sports do more to undermine the insidious work of Bolshevistic propaganda than bales of printed literature. The men learn to know each other—to have that ingrained appreciation of each other which is essential to the harmonious working of an organization. It builds up the organization spirit—instills the tenets of loyalty.

Industrial athletics is a growing movement. It builds that same morale in an industrial army that our country instilled in our fighting army during the World War. It provides healthful, profitable recreation, well calculated to benefit employer and employee alike.

SHOW WINDOW SUGGESTIONS.

A SHOW window can be made very profitable if used right. The windows should always be kept clean, a necessity to successful selling that is overlooked by many master plumbers. The display should also be clean and attractive. It should be varied at least once a month. The effort in making distinctive displays will be well spent and can be made a pleasure.

Signs, carefully lettered and easily read should be used at all times. Make each message brief and to the point. Feature in each window some small salable, over-the-counter goods to get people in the habit of coming into your place of business. Small profits lead to larger profits.

Make displays seasonable whenever possible. Keep your windows lighted at night. The lights can be shut off automatically at any hour you wish. Have a novelty display occasionally—something to make people talk more about your store and your business.

In the modern business world, the window space of a store is recognized as a publicity agent of vital importance and as a direct advertising force. No live master plumber should allow his window display to look dull.

The man, who creates business instead of waiting for it to come to him automatically, creates a bank balance, which comes to no man without effort.

DRYERS *and* KILNS *for* INDUSTRIAL PROCESSES

The Construction, Installation and Operation of Dryers and Kilns of Various Types Described and Illustrated

By Charles L. Hubbard

(Continued from Page 175 in the January 24th Issue.)

Apartment Kilns with Natural Circulation.

This type of kiln is generally employed for lengths under 75 feet, and is especially desirable when the stock used by the manufacturer is required in comparatively small quantities, of varying thicknesses, from a diversity of woods and in varying degrees of dryness. Such conditions make the apartment kiln more advantageous than the progressive type, due to the greater convenience in drying certain grades of lumber in the quantities desired, and applies especially in the manufacture of furniture, interior finish, etc.

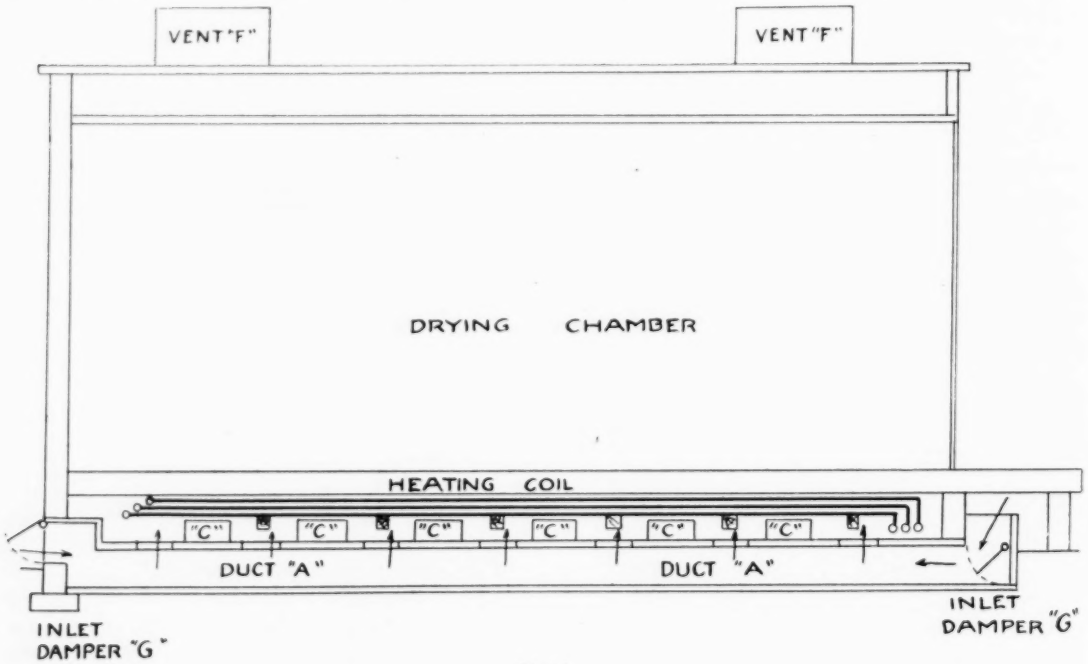


Fig. 4.

This type of kiln is not generally used in connection with the manufacturing of standard goods on a large scale which require a considerable stock of the various grades to be kept on hand at all times. Under these conditions, a kiln of the progressive type will prove the most satisfactory, if there is ample space for its installation.

A typical apartment kiln is shown in longitudinal section in Fig. 4 and in cross section in Fig. 5. The coils in this case extend the full length of the drying chamber and much more of the floor area as will be evident from an inspection of Fig. 5. Lumber is piled directly on the timbers "T" "T," or may be run in on trucks. Air is admitted at either end of the ducts "A" "A," and from here passes through openings into the space beneath the coils, the rate of flow being controlled by slides not shown in the drawings. Partitions "P" "P" extend the full length of the compartment, separating the supply ducts or chambers "S" "S" from the side ducts, which connect with the vent flues "F" "F." The dampers "G" "G" at the ends of duct "A" "A" are for controlling the air supply, especially in case of winds which may blow more strongly in one end than in the other.

Partitions "P" "P" contain openings "C" "C" (see Fig. 4), through which the downward currents may be recirculated into the space "S" "S", beneath the coils, when no fresh air is being admitted and no saturated air is allowed to escape into the flues "F" "F."

In operation, the compartment is first filled, then steam turned into the coils a little at a time, thus raising the temperature gradually and producing as nearly as possible the same effect as is secured in the progressive kiln. The humidity is controlled by regulating the air inlet dampers, and the temperature by varying both the heating surface and air supply.

Forced Circulation Kilns.

Forced circulation, by means of a fan and hot-blast heater, is used in connection with both the progressive and apartment types of kiln, although better adapted to the former except in special cases. This kiln is especially recommended for drying bent stock, staves, heading, shingles, hoops, lath, tub and pail stock, and is almost universally used in these particular lines. A general layout for an equipment of this kind is shown in plan in Fig. 6 and is quite fully explained by the notes on the drawing. The fan and heater equipment is located in a separate compartment outside the kiln, and air may be drawn either from outside or recirculated, as indicated by the arrows. After passing through the heater to the fan it is delivered into a space beneath the dry end of the kiln from which it rises through floor openings "O." "R" "R" are openings into a central space connecting with the air chamber in the fan room, so that by a proper manipulation of dampers either all or any proportion of the air may be returned to the fan from the kiln. At the wet end are additional floor openings "S," by means of which a portion of the air may be drawn off through the vent flu "F," when the degree of humidity becomes too great. A cross-section through this kiln is shown in Fig. 7, and illustrates the general location of fan and heater with reference to the drying chamber.

General Data.

It should be stated that the diagrams are simply to illustrate the principle of drying and are not intended to serve in any measure as working drawings. These, it is expected, will be furnished by the manufacturers of the drying apparatus, but the contractor or fitter installing such work will be better prepared to interpret the working drawings, by devoting a little time to the study of the accompanying diagrams in connection with a reading of the text.

When drying hard woods, the best results are usually obtained with a moderate temperature and high humidity, little fresh air being required and none allowed to escape. For soft green woods, it is usually necessary to depend entirely upon fresh air, except in very cold weather. Between these extremes there are many combinations employed, depending upon various local conditions.

Spruce, hemlock, pine and gum dry with any temperature from 120 to 200 degrees. It is evident that the higher the temperature the faster will be the rate of drying, but this must not be carried to a point which will produce checking. Cypress, cedar and sap pine dry best with the atmosphere nearly saturated and a temperature around 180 degrees.

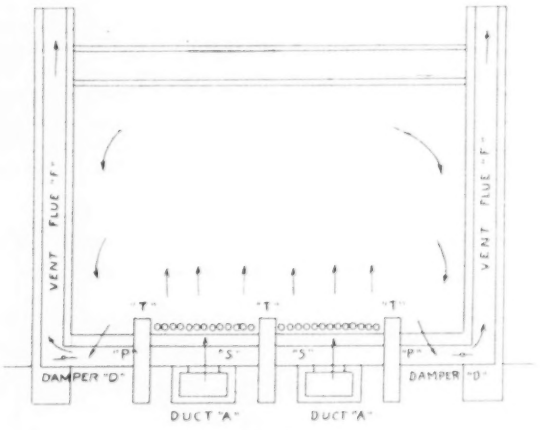


Fig. 5.

Quarter sawed oak requires great care in order to produce a fine texture of grain and good finish. In general the temperature should not exceed 120 degrees, while a lower temperature and a longer period of seasoning are advantageous if they can be carried out without producing precipitation at the green end of the kiln.

Red oak does not require a temperature above 140 degrees, but will stand forcing without injury better than white oak. White and black ash, maple, sycamore and black walnut can stand a temperature up to about 160 degrees if the humidity is high.

Thermometers should be placed at both ends of a long kiln, when operated progressively, the instrument at the green end being placed at some little distance from the door. Self-recording thermometers of one form or another are especially adapted to this class of work.

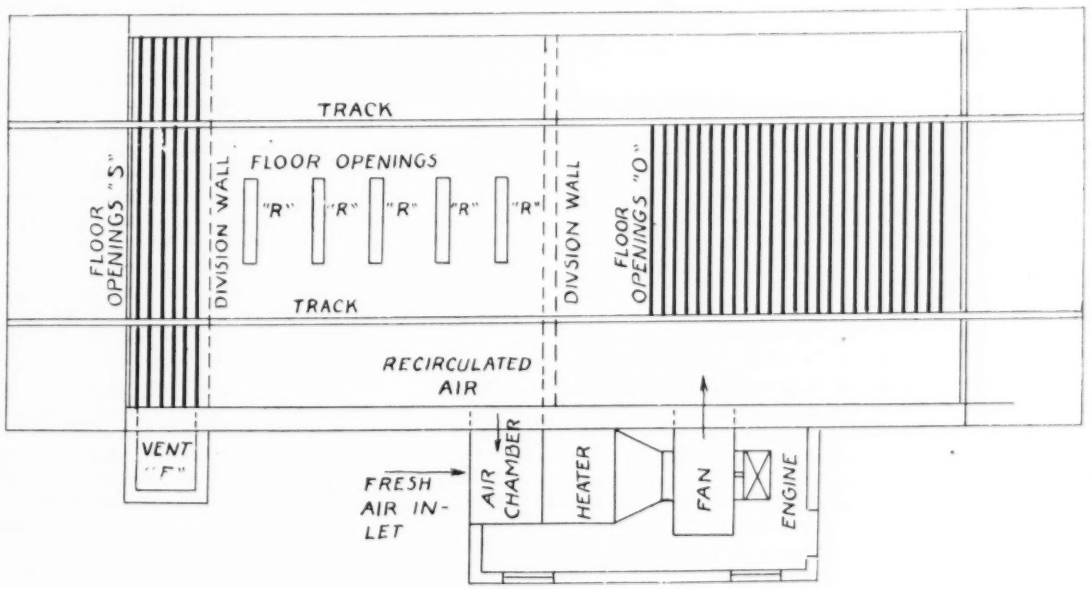


Fig. 6.

For determining the humidity, some form of hygrometer is used and usually is of the wet and dry bulb type.

There are several convenient forms upon the market, each being provided with special directions for use.

The amount of steam required for drying will average from 1.5 to 2 pounds for each pound of water evaporated.

The weight required to dry 1,000 feet of any particular kind of wood may be determined by weighing a sample of known measurement, before and after drying, and computing the weight of water removed, then allowing 1.5 to 2 pounds of steam per pound of water evaporated. Catalogues of drying equipment and certain engineering hand books also give data

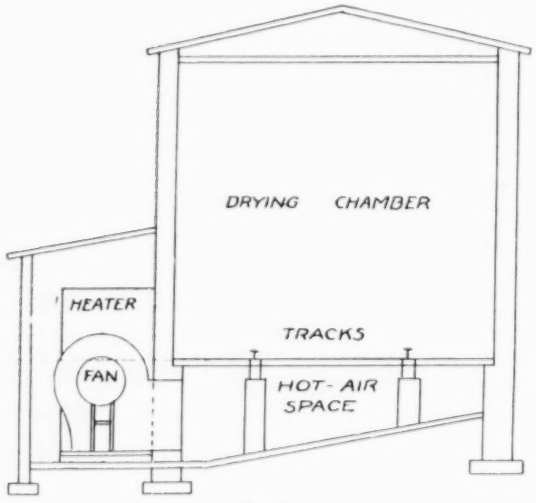


Fig. 7

regarding the weight of water to be removed in drying different kinds of wood and may be consulted for this purpose.

The amount of steam condensed in a natural circulation kiln will vary from 0.25 to 0.4 pound per hour per square foot of surface. With forced circulation, taking the air from a return duct, the weight of steam condensed will be at least twice the above figures.

Brick Drying.

To dry clay rapidly and economically there must be heat to volatilize the moisture and drive it off into the surrounding air, and a positive circulation to carry the vapor away before the air becomes saturated. Different clays require different temperatures for the best results, and the circulation should also vary to some extent with the temperature carried. Clay running high in alumina must be dried slowly, or it will check badly. Soft mud bricks dry more slowly than stiff mud, even if there is no more moisture in them. Fire-proofing material can be dried rapidly because of its porous nature and thin mold.

Large architectural terra cotta blocks require a long time because of the density of the clay and the size of the product.

The progressive system of drying is most widely used for this class of work, the kilns consisting of long tunnels or compartments into which cars of wet brick enter at one end and when dried are removed from the other end. The general construction and operation of a kiln of this type are as follows: Hot air from a fan and heater is supplied to a duct at one side, from which it passes upward through floor openings, and after passing between and over car loads of brick is drawn off through the duct at the other side, which connects with an exhaust flue discharging outboard.

The cars of brick are introduced at the one end of the kiln and removed at the other end, where the air is the hottest and driest. An interesting feature in connection with the drying of brick and similar clay products is the utilization of waste heat from the burning kilns.

It is stated that after the fires are out in a kiln holding 200,000 brick, there remains sufficient stored heat to operate a 100-horsepower boiler for two weeks. Formerly this heat was wasted, and that required for drying purposes was generated by burning additional fuel.

The general method of utilizing the waste heat in a modern plant is described as follows: During the process of burning, the dried brick are placed in the kiln, and a number of fires carried in openings through the outside wall. The products of combustion first pass upward, and then downward through the brick by way of openings in the floor, to a duct which connects in one direction with a chimney and in the other with the supply fan to the dryer. During the burning stage, the damper in the duct leading to the fan is closed and the hot gases pass to the chimney. After the burning has been completed, the dampers are reversed, and outside air enters the kiln, passes downward through the hot brick, and then to the fan. The temperature is controlled by admitting varying amounts of outside air to the duct through an opening between the kiln and the fan. The dryers are placed side by side between the fan and burning kilns and are supplied with air of the proper temperature in the manner already described. This arrangement not only has the advantage of utilizing a large quantity of heat, which would otherwise be wasted, but greatly shortens the time required for cooling down the burning kiln.

IF YOU HAVE THE FLU, BLAME MOSCOW WANDERER.

Disease Brought to Russian City From Orient in 1545 Sweeps World.

If you're laid up with the flu and would like somebody "to take it out on," don't harass the wife or argue querulously with the doc. The real person to blame is the wanderer with a running nose who staggered into Moscow in 1545. The name of this person is unknown. But around 1545 Moscow was laid low with an epidemic of the flu. It had come from the far East and had been making its way out of the northern provinces of China for almost two centuries. The disease was kept away from Europe by the lack of travel. But just as soon as a good carrier offered itself for the Oriental germ it started westward and in the middle of the 16th century alighted in Moscow with some intrepid traveler name and occupation unknown.

"The history of the influenza," says a medical authority, "is now a matter of record. Following the first known epidemic in Europe, the thing recurred and recurred. Its first appeaarnce was extremely fatal, but with continued outbreaks the virility of the flue germ abated."

Reference to a medical history revealed that in the nineteenth century five distinct epidemics swept over the world, traveling from the Caucasus to the Rocky mountains via all the civilized countries of the earth. A theory concerning the recurrence of the epidemic in 1917 is that it was brought to France by the thousands of Chinese coolies used for labor behind the allied lines. This theory is combated by many of the army surgeons who hold that since its original release from its Oriental fastness the flu germ has been common property.

According to testimony given the House by Rear Admiral Taylor, chief of the Bureau of Construction and Repair, the peace-time strength of the American Navy after July 1st, will be approximately 940 ships.

CERTAIN FEATURES *of the* INCOME TAX EXPLAINED

The Personal Service Corporation Classed with Partnerships—Distinguishing Elements — Profits Realized from Sales of Personal and Real Property and How Determined—Exchange of Property—Depreciation Allowance—Contributions—Losses

By Wellington Gustin

UNDER the Income Tax Statute there are three chief classes of "persons," namely, individuals, partnerships and corporations. Corporations thereunder are held to include associations, joint-stock companies and insurance companies, but not true partnerships. As has been pointed out in these articles certain limited partnerships have been classed as associations or joint-stock companies and taxed as such. But there is the "personal service corporation" which is classed with partnerships upon which, as such, there is no tax imposed.

Joint stock companies and associations include common-law trusts, which have become quite common in recent years, and organizations by whatever name, which do business in an organized capacity, whether created under and pursuant to state laws, agreements, declarations of trust, or whatnot, the net income of which is distributed among the share-owners on the basis of the capital stock which each holds, or where there is no capital stock, on the basis of the proportionate share or capital which each owns or has invested in the business or property of the organization. Where one's membership interests are transferable in an organization without consent of all the members, and the business itself is conducted by directors, trustees or officers without active participation of all the members, such is an association and not a partnership. And such are likewise subject to the corporation tax.

The Personal Service Corporation.

But to a great many the organization of special importance is that termed "personal service corporation." Just what is a personal service corporation is not easily defined. The Commissioner has ruled that the term means a corporation, not expressly excluded by the statute, "the income of which is derived from a profession or business, (a) which consists principally of rendering personal service, (b) the earnings of which are to be ascribed primarily to the activities of the principal owners or stock holders, and (c) in which the employment of capital is not necessary or is only incidental." And he further says that no definite and conclusive tests can be prescribed by which it can be determined in advance of an examination of the corporation's return whether or not it is a personal service corporation.

Those Expressly Excluded.

Those corporations expressly excluded from classification as personal service corporations are classed as follows: (1) Foreign corporations; (2) corporations 50 per cent or more of whose gross income consists of gains, profits or income derived from trading as a principal; and (3) corporations 50 per cent or more of whose gross income consists of gains, profits, commissions or other income derived from a Government contract made between April 6, 1917, and November 11, 1918, inclusive.

Some Determining Factors.

One is not a personal service corporation merely because less than 50 per cent of its gross income was derived from trading as a principal or from Government contracts. But to be deemed as such its earnings must be derived principally from the compensation for personal services rendered, by the corporation to the persons with whom it does business.

Merchandising or trading either directly or indirectly in commodities or the services of others is not rendering personal service, so the Commissioner rules. Conducting an auction, agency, brokerage or commission business strictly on the basis of a fee or commission is rendering personal service. However, it is held that if the corporation assumes any such risks as those of market fluctuation, bad debts, failure to accept shipments, and such, or if it guarantees the accounts of the purchaser or is in any way responsible to the seller for the payment of the purchase price, the transaction is one of trading or merchandising, and this is true even though the goods are shipped directly from the producer to the consumer and are never actually in the possession of the corporation. The fact that the earnings are termed fees or commissions is not controlling.

Where Personal Service is Combined with Non-Personal.

Often corporations are engaged in more than one business or profession, more or less related, into which personal service enters. Thus an engineering concern may also engage in contracting, which amounts to trading in labor and materials, or a dealer in a commodity may furnish expert advice or services with respect to its installation, use, and such. Here it has been ruled that in such a case the corporation is not a personal service corporation unless the non-personal service element is negligible or merely incidental and no appreciable part of its earnings is to be ascribed to such sources.

A corporation engaged in contracting and construction work is held by the Commissioner to be engaged in a non-personal service business in which the employment of capital is necessary. But were a corporation engaged in rendering say, consulting engineering service, this would be a personal service business, which, were it the sole business, would make it a personal service corporation.

The law also provides for an apportionment of the invested capital where the corporation's income is derived in part from personal service, and for tax accordingly.

Personal service corporations and ordinary partnerships fill out the same return form.

Profits on Sale of Personal or Real Property as Income.

In the disposition of property of any kind, as merchandise, or other personal property, and real estate, if there is a profit made by the sale or other disposition, such must be included in the taxable income. However, if any part of the profit accrued, as in real property, before March 1, 1913, the date of the first income tax law, such part is not taxable, even though it is realized after that date. The taxable profit is determined by deducting from the selling price, the cost of property acquired after March 1, 1913, or the value on that date of property previously acquired. The return must state how you have determined the fair value as of March 1, 1913. Of course this is a matter of fact to be determined and evidence may be considered as the quoted price for securities and other property of an established market value. Where the property has no established market price, then the opinion of experts may be given. The cost of property will include, in addition to the original purchase price, expenses necessary to acquiring, holding and disposing of the property, as stamp taxes on the transfer, cost of securing abstract, or defending title, insurance where the property was only held for resale and was not used for a personal benefit, storage charges in a buying and selling transaction, and similar expense not otherwise deducted.

Exchange of Property and Gain on Stocks.

Where property is exchanged, if a fair valuation is fixed by the parties for the purpose of the exchange, or if it has a definite or ascertainable market value, the value of such property must be treated as the price received as in a sale. But if there is no definite fair value the cost of the property originally held should be taken as the cost of the property acquired, with no taxable gain or no deductible loss arising from the transaction. The taxable income does not include any paper profits or mere bookkeeping gains not actually realized in tangible property of cash or other form. Suppose one has purchased stock that has increased on the stock exchange 25 points. The owner has not realized this gain until he has sold the stock, for the stock may fall on the market. The transaction must be completed and the profits actually realized before the income tax may be imposed. Hence one who has engaged in numerous transactions in buying and selling stock during the year may not report in his return merely the increase in his balance with his broker. Instead the actual gains or losses of each transaction should be separately determined. Where property received as a gift is sold, any increase in the selling price over its value at time of receipt, or on March 1, 1913, if acquired previously, is income and must be reported.

Depreciation of Property Allowed.

Buildings held for renting purposes, buildings, machinery and other like property used in manufacturing and trading and other business are liable to depreciation and the law provides for an allowance for such decrease. This does not apply to materials used in manufacturing or to stock in trade, but only to property held as a permanent asset. This depreciation means the physical exhaustion, wear and tear of property, and not to a shrinkage in value, as in stocks and bonds, or unimproved real estate. Where it is known that property is going out of date and will be entirely worthless within a certain period of years, the decline in value may be anticipated and charged in the current year. The obsolescence of property may thus be anticipated and provided for. The disappearing value of patents may be deducted as a depreciation allowance. But no deduction is allowed for the depreciation of property held for personal use as that on a dwelling house or pleasure car, and such. Where one's dwelling is partly used for business, as where one uses a room or such for his office, a deduction may be allowed for that part devoted to business purposes. This deduction becomes highly important where one owns an apartment building and lives in one of the apartments. He may deduct for all but the part he occupies.

Determining the Allowance for Depreciation.

The deduction must be explained on one's return. This is done by showing separately for each class of property, its character, cost or value on March 1, 1913, its estimated life, and the depreciation charged for all prior years. The value on March 1, 1913, of property then owned, or the cost if subsequently acquired should be equally divided over the number of years of estimated life and the amount thus found deducted in each year. If property is not kept in repair the depreciation will be larger than usual, but it is proper to assume such reasonable repair will be had.

Donations and Contributions—When Allowable.

Donations made to churches for any purposes in furtherance of the church work are deductible, while donations to individuals, although charitable in their nature, are not. But no deductions are allowed a taxpayer in an amount in excess of 15% of the net income as computed without the benefit of such deduction. All contributions must be made to certain classes of organizations to be allowable, and these are corporations or associations organized and operated exclusively for religious, charitable, scientific or educational purposes, or for the prevention of cruelty to children and animals, no part of the net income of which inures to the benefit of any private stockholder or individual, or to the special fund authorized by Congress for Vocational Rehabilitation of soldiers. Partners may take credit for their proportion of such gifts made by the firm.

When Losses May Be Deducted.

Losses, whether personal or connected with the business, when actually sustained during the year may be deducted from the gross income. A loss is only sustained when it has been determined upon an actual completed and closed transaction. Where one owns corporation stock on which the value has decreased, he has sustained no loss for purposes of the law until he has made a sale of the stock at such decreased price. Thus where one wishes to claim a loss on stock it will be necessary to make a sale of said stock. By so doing one can sell on a low market, and repurchase on the same market, and report his loss.

The taxpayer's return must show separately the losses incurred in trade or business, losses incurred in a transaction entered into for profit but outside of his business or trade, losses arising from thefts, bad debts charged off as worthless, losses through fire, storms, shipwrecks, and similar casualties. Deductions for worthless debts are obtained by stating in the return how the loss was ascertained, as that the debtor has flown to parts unknown leaving no property or that the usual and ordinary methods of collection have been resorted to without results. will be allowed only if the sum has been included in one's return of income, provided the amount of income required a return. Thus the illustration that if one take a promise for a debt in one year, but does not include the sum promised in his return for that year as income, he is not entitled to any deduction if he now finds this promise to be worthless, provided his income in that year was sufficient to require a return.

When bonds are ascertained to be worthless their cost may be deducted as a loss. But stocks, not being debts, admit of deductible losses only when sold at a loss, or when their value ceases to exist as property through a dissolution of the corporation.

OVERHAULING *the* PLUMBING *in an* OLD COLONIAL MANSION

Making the Well—Selecting and Installing the Electric Pump and Automatic Control

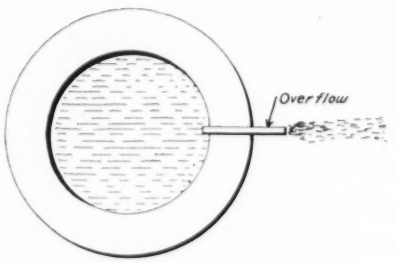
By Robert J. Gordon

Chapter XI.

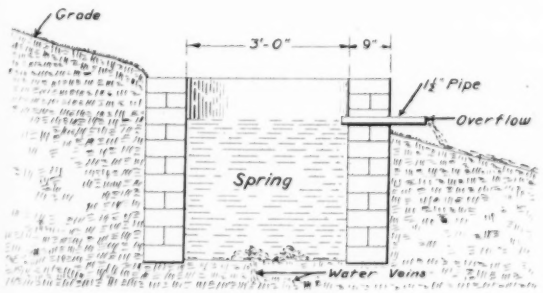
IN preceding articles we described quite fully the general lay-out of the sewerage system, and the water supply system, outside of the building and on the grounds.

We also went into considerable detail with reference to the plumbing inside the building. In fact, we have practically finished our description of the interior work, with the exception of a few items which we may detail later.

But we have not yet discussed the outside water supply system in detail. That is what we will attempt to do now.



PLAN VIEW OF WELL



HORIZONTAL SECTION

Fig. 1.

And in doing so we will repeat our practice of bringing the plumbing contractor, Mr. Jones, and his faithful bookkeeper, Old Si, into the subject.

As the lay-out is up to Jones, he will design the system and prepare the necessary working drawings for his men in pencil. Si, however, will have the job to finish them up in ink, and those, which have to be submitted to Mr. and Mrs. Adams, the owners, for their approval, will be colored up attractively by Si.

At the present stage the plumbing is well advanced in the building. The drains and stacks are in. The fixtures are on the job, and the plumbers are busy running the branches to them. In a few days they will be set and the plumbers will be ready to go ahead with the outside work.

On the grounds the pump, piping, pneumatic tank, etc., are ready to be installed, and Jones has a mason coming tomorrow to do whatever work is necessary in his line at the spring and in machinery room.

Si is anxious about getting the working drawings ready for the mason, and to have his materials on the ground on time.

"Mr. Jones," he said, "the mason's drawings will have to be prepared today as he is going out to the mansion to start work tomorrow."

"That's so, Si," said Jones as he laid aside some blue prints and specifications of another job he was about to figure on. "That's so—much obliged for reminding me. We must lay out his part of the job at once. Come, let us talk it over, and as we do, I'll make the sketches in pencil as usual."

Si went over to the drawing table and seated himself beside Jones. He was becoming accustomed to this kind of work and rather liked it.

He felt that he was doing something worth while for the business when he helped the Boss make the plans for this mansion job, of which they were both pardonably proud. Indeed, it was a good thing for Jones and his business that his bookkeeper was not only able but willing to help with the plans.

Of course, they had their arguments for each had his own opinion of things. But the frank discussions they had just cemented the men closer together.

Jones recognized in Si the willing, faithful, able worker, who was not backward in speaking his mind for the benefit of the business, even if he did express himself rather cold and sour at times.

And Si recognized in Jones the master mind who not only could and did lay out things right but had the intelligence to prove his assertions, and had the backbone to stick fast to them when he knew he was right.

So it happened that the team work of the two men at the drawing board drew them closer together with a higher respect for each other's particular qualifications.

If you have read the preceding chapters of this series perhaps you will understand why.

The Spring on the Side of the Hill.

Jones opened his note book and studied a sketch carefully, while Si pinned a sheet of drawing paper on the board. The sketch which interested him is shown in Fig. 1.

"This sketch," he said, "is a plan view and cross section through the present spring on the side of the hill, and down near the swamp. Do you remember we showed its location on our plot plan of the estate?"

"I do," replied Si examining the sketch. "What about it?"

"Nothing particular. Only these are the exact dimensions of the spring where we have to install our pump, and I'm just wondering what is the best way to go about it. That's all," replied Jones, laying the book on the table for Si's inspection.

"This old spring is 3 ft. inside diameter and the water is 2 ft. deep, and it overflows through a short piece of 1½-inch pipe," Si commented, passing the book back to Jones. "It's like lots of other old spring holes I've seen, only it is walled in."

"Well sir, I measured the overflow of this spring," said Jones. "Bill and I together, and we figured it is ample to furnish all the water required for the estate, and more."

"That's going some," commented Si, "but how do you know it don't dry up in summer? Some springs are like folks I know, they're very promising but quite unreliable. I hope your optimism is not running away with your judgment."

"Thanks old man. Your wisdom is profound," said Jones smiling. "Your knowledge of human nature is wonderful. Folks have to live together, year in and year out, to know each other thoroughly, eh?"

"Yep—and sometimes even then they are a mystery," replied Si. "To size up a man right you have to study him during his adversity—then you get him down pat."

"Well, don't worry, old chap. I measured this spring when it was at its worst. I measured its flow during a dry spell, when other springs were dry as a hound's tooth, so I'm sure of it. And believe me," continued Jones, "any thing, whether it be a man or a spring, that holds up its reputation during repeated periods of adversity is all right. This spring has never been known to run dry. Its overflow has run continuously for years, and that's a good reputation."

"All right, Mr. Jones," mumbled Si, "you investigated the spring and you ought to know—only be sure you're right."

"And what's more," continued Jones, "read that. There is proof that the quality of the water is O. K. and that is more important than the quantity."

A Pure and Wholesome Water Supply.

Si read the sheet which Jones had withdrawn from his pocket and presented to him.

"Why that's an analysis of the water," said Si. "It says that the water is free from harmful bacteria and contains nothing in solution that is harmful. The summary at the end says that the sample tested is wholesome, potable water well suited to drinking, cooking and general washing purposes. That's fine and it is signed by the State Chemist."

"Well, now—what more can we do?" queried Jones. "Haven't I taken all ordinary precautions?"

"I guess you have," returned Si. "What you have to do now is to install an equipment that will give them a steady supply of that water all the time. That's all I can think of, unless it be that you turn over this analysis to the owner to satisfy him that the water is good and safe."

"Good suggestion, Si," said Jones slapping him on the back in a friendly way. "I certainly will do that. Now let us get busy on our layout."

He immediately started to make a drawing of changes at the spring, and Si became a silent but interested spectator as he watched Jones hastily describe circles to show the spring in plan view and other lines to show the remainder of the work.

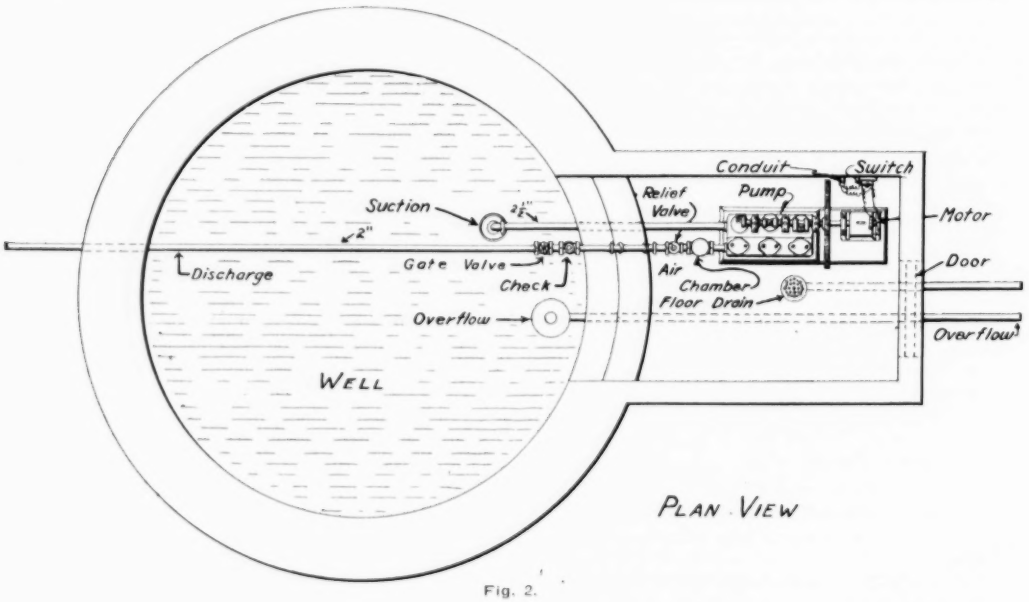


Fig. 2.

When he had finished, his sketches resembled Figs. 2 and 3.

"Well, old chap, what do you think of it?" Jones asked. "Does it suit you?"

"It does in a way," Si replied thoughtfully, "and it don't in another way."

"Say how," demanded Jones abruptly.

Si hesitated.

"Too expensive," he returned.

"How so?"

Making the Well Deeper and Wider.

"You have ripped out the old spring walls, dug the spring deeper, made it larger in diameter, roofed it in, banked it over with dirt, built a separate extension in the form of a pump house and a lot of stuff like that," Si replied quite firmly. "I think you could give them plenty of water without all that expense."

Jones was amazed at Si's frankness. He thought that by this time Si must have outgrown his tendency for cheapness, particularly after all the arguments they already had along that line. But he retained his equanimity.

"Well, Si," he said not unkindly, "it's a hard job to teach an old dog new tricks, ain't it?"

"It depends on who is the dog," growled Si.

"Why, you're the dog in this case," snapped Jones.

"How so? I did not make this drawing," Si replied indignantly. "You made the drawing, and I maintain it is needlessly expensive."

"Well then, old tightwad, you must have some other plan in mind. Tell me what it is," demanded Jones. "If it's better than my plan, I'll adopt it."

"You said the overflow of that spring was 2,160 gallons in 24 hours, or 1½ gallons per minute, or 90 gallons per hour," Si began. "I remember it well. That being so, I think all you have to do is to put a cover over the present well, set a pump on the cover, build an inexpensive boxing over the pump, and that's all you need. You don't require any mason work at all."

Jones laughed, and of course Si grew hot.

"There's no use laughing," Si mumbled. "I've read about pumps being set that way before. Laugh at your own extravagance."

"What kind of a pump would you use in a cheap installation of that kind?" Jones asked. "An ordinary pump with an electric motor attached," replied the bookkeeper, "there's lots advertised in the trade papers by the makers of pneumatic tank systems."

"Show me one adapted to this spring as it stands at present," Jones demanded.

Si looked up some "ads," also some catalogs of rural water supply systems, and finally selected an electric driven shallow well pump which was illustrated alongside of a pneumatic tank. "That will do," he said. "Just use the pump and motor without the tank, as your tank will be up in the engine room."

The Selection of a Pump.

The pump selected was a geared triple pump with motor and pump on the same base, something like that shown by Jones in Fig. 3.

"But that pump will freeze if you set it above ground," Jones protested. "The suction and discharge pipes as well as the pump cylinders will all freeze and burst—then what?"

"Ah!" ejaculated Si. "I—I never thought of frost."

"But I did," returned Jones, "and that's why I cover the whole pump compartment extension with dirt. Furthermore I leave the pump compartment open to the spring so that the heat of the spring water can get up and around the pump to keep it from freezing. The door I provide will be of regular ice box construction to keep in the natural heat.

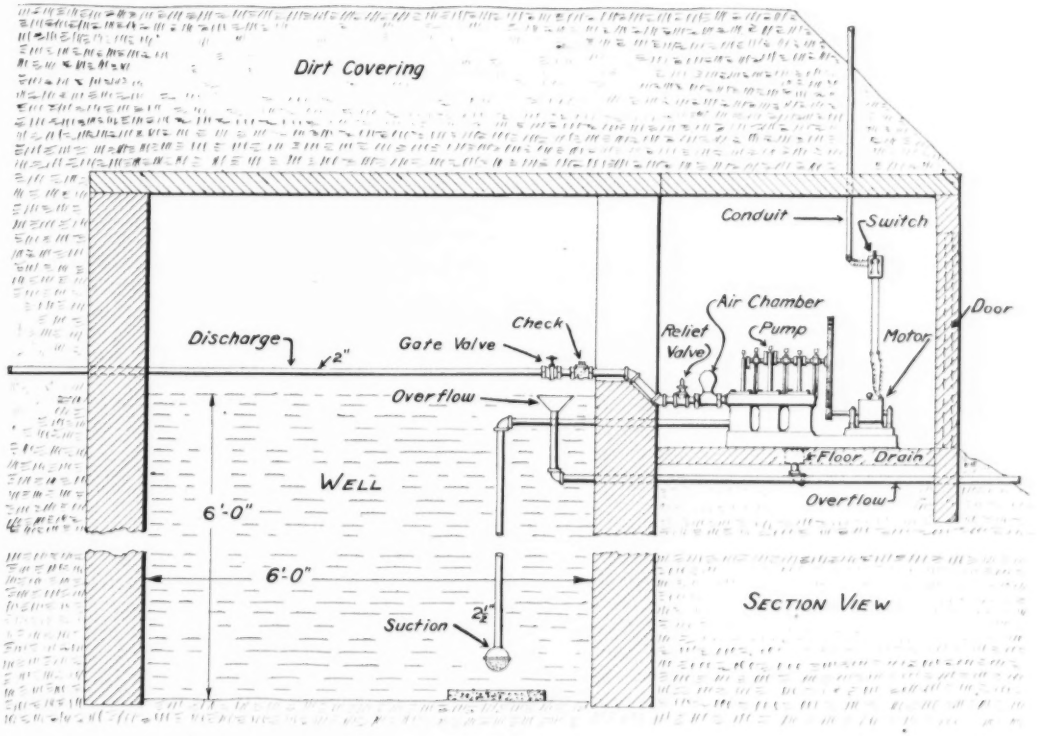


Fig. 3.

"Don't you see (Fig. 3) how I have arranged both suction and discharge pipes so that they will be away from the door and will get heat from the water and the earth?"

Si remained silent. Jones looked around at him to see what was the cause of the great silence.

Si was deep in thought. He hated to lose in an argument, and was struggling hard to win his point.

"What have you to say now, old man?" Jones asked. "Are you floored already?"

Then a bright idea came to Si. "Floored—No," he replied, "far from it. I'll show you a more simple plan yet, and one that can't freeze up even if we have zero weather for a week," and he grinned with satisfaction.

"All right," said Jones, "sketch it out."

Si made a pencil sketch of the original spring and added a pump and motor as shown in Fig. 4.

"There," he exclaimed triumphantly, "there's my plan—my improved anti-freezing plan. That will do. And as far as cost is concerned, it beats your plan to a frazzle."

Jones stared in amazement. "Well, I'll be dinged, if you haven't got ideas in your head after all," exclaimed Jones. "That's a good one. Where did you get it?"

"Oh, any fool would think of that plan if he really wanted to be economical," Si replied proudly. "Ain't that O. K.?"

Jones thought it over for a minute. He was not posted on centrifugal pump work and was not very sure of his ground. Yet the simplicity of the scheme appealed to him, for although he was not hunting for cheapness, still he was always looking for simplicity. "The fact is," he said quietly, "I have never had experience with centrifugal pumps and I am not sure about this plan yet. Look up the pump catalogs and see what you can find in pump capacities of this style. I like the get-up very much, if it will fill the bill. But we must be sure it will work right."

Si looked up centrifugal pumps in several catalogs. At first his face beamed with delight as he saw them illustrated. Then on reading the capacities his jaw drooped. "Shucks," he exclaimed as he handed the literature over to Jones, "they don't give much information."

Jones studied the catalogs. "Si," he said, "they evidently cannot discharge against much pressure. According to the data these pumps are suitable only for very

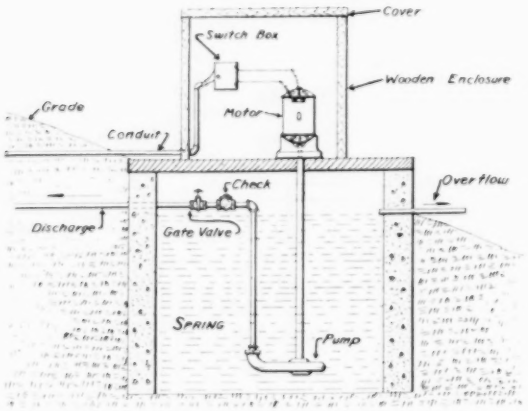


Fig. 4.

low back pressures. The tables give their revolutions up to only 60 ft. vertical head of discharge. That means a maximum of about 25 pounds per square inch back pressure. Our pump will have to push against 90 to 100 pounds back pressure, including friction of the long line, the hydraulic head from house to well, and the working pressure to be maintained in the system.

"As I do not wish to take any risks on this job, we may even have to run higher pressures for fire-fighting purposes, etc. I'm going to use a triplex pump the same as shown in my sketch. I know what that pump will do. Your idea of using a centrifugal pump could be perfect, if we only had to lift water from the spring and deliver it openly into a tank not more than 50 ft. above the spring. But for back pressure work, such a pump may have too much slip.

"I'm glad you suggested it, though, for I certainly will use a layout of this kind the very first chance I get. It is simple, positive when working under favorable conditions, easy to care for, is safe against frost, will throw a large volume of water under a low back pressure, requires no air chamber, nor relief valve, makes no pounding noise, has a direct-rod connection to the motor, and, as you say, is cheap, although that last point does not interest me much, unless I happen to be driven to cheapness by competition. Yes, Si, I thank you for the suggestion and am sorry we have to turn it down at present."

"All of which means that you will install the triplex pump in a separate underground concrete housing as you show?" interrupted Si rather disconsolately, for he really hoped his suggestion would be practical.

"Yes—exactly so," replied Jones, "for it is safe and sure, and will not only furnish all the water they need, but will also furnish all the pressure required."

"But about all that masonry expense," said Si, as if he must have a parting dig at the Boss. "Can't you eliminate that?"

"No—and I don't want to," replied Jones. "I'll tell you why. The present spring only holds about 100 gallons. The water comes into it at the rate of 9 gallons per minute. This triplex pump I am using will draw water from the spring at the rate of 21 gallons per minute. That is 12 gallons per minute in excess of the inlet to spring. The pump would therefore drain the spring empty in less than ten minutes. Then it would suck air, force the air up into the pneumatic tank or direct to the building and work havoc in the system. Do you see that?"

"I do," replied Si. "How do you happen to think of these things? I am sure the average plumber would never think of such a thing."

"That's the reason so many of them do not seem to get ahead," replied Jones. "They don't take time to consider things properly. Mark you, I don't mean to say that about all; but those who are careless, usually have very little to show on the credit side of their books at the end of a lifetime in the business. I find it pays to give careful consideration to layouts that are expected to perform certain functions. Not only is one's reputation at stake, but if he guarantees results, and these results are not obtained, then he has to produce results out of his profits. It's the eternal trouble part of such a man's business that keeps him poor. The best plan always is to be sure you're right, before you go ahead. Then go ahead and drive the job.

The Pump, Its Construction and Operation

"The pump I show has three 2½-inch diameter cylinders, with 3-inch stroke. Every revolution will drive .191 gallons into the line. There will be 110 revolutions per minute, which is easy pumping. That means 21 gallons per minute. Furthermore, the pump will work against a maximum of 180 pounds pressure if necessary.

"The suction pipe is 2½-inch. It's big, but I like a big suction pipe. The discharge is 2-inch. The pulley or gear wheel will be 42 by 3, and pump and motor are all set on the same base. This pump will stay put, and will last as long as we are in business, and perhaps longer."

"I guess it will, if you do many jobs like this mansion job," interrupted Si. "A few like it will put you on Easy Street."

"Don't you believe it, old friend," Jones remonstrated. "There is not as much profit in it as you appear to imagine. Deduct overhead—my time, your time, etc., etc., and you'll find there is only a bare 10 per cent left for living expenses."

"But referring back to my sketches (Figs. 2 and 3) I am ripping out the old spring, making it deeper and wider, only to secure an abundant source of supply. It should be large enough to hold at least half a day's supply, if possible. That means about 1,000 gallons. In other words the well should have a holding capacity of say 150 cubic feet. A well 6 ft. in diameter with a depth of water 6 ft. deep should give that much storage. Then the pump

(Continued on Page 319.)

HOW SOME PLUMBERS MAKE MONEY

A Few Ideas Contributed by Readers of "Domestic Engineering"

THE request made by "Domestic Engineering," asking subscribers to send in 100-word letters outlining some ideas they had put into effect that made money for them, brought responses from many parts of the country. Some of the letters are reproduced herewith, while others will be found in the Plan Number, published January 10th.

Letters from subscribers are always interesting, and their publication reflects credit on the author and benefits the trade at large. Those who write are to be commended for their broadmindedness and willingness to impart to their fellow craftsmen some of the experiences they have had, and how they have cashed in on them. The trade paper is the most effective clearing house that the plumbing and heating contractor has at his disposal.

One dollar was paid for each of the letters reproduced herewith, and "Domestic Engineering" is willing to make this a standing offer. Do not hestitate to do your part in elevating the craft and helping the other fellow. If these letters are of any assistance to you in making your business more successful, show your appreciation by sending in one or more ideas that you have worked out profitably, and earn a dollar at the same time.

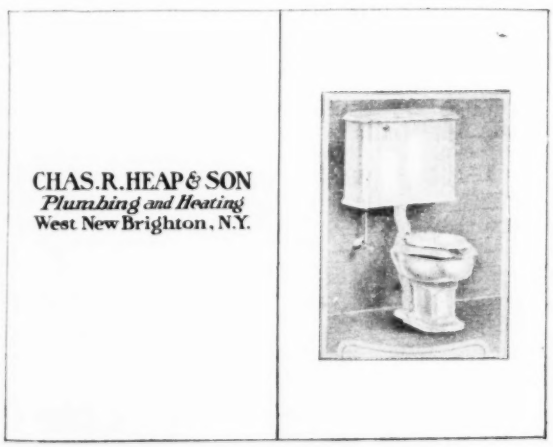
Here is what others have done:

Small Folders Increase Remodeling Work.

Here is a plan that we consider pays us well. It has been in use in our office for some time.

When sending out estimates and specifications, especially on remodeling work, we enclose a number of small folders (size 2½ inches wide and 4 inches high).

These folders are made of light blue stock and on the



right side of each is mounted a cut of one of the fixtures we propose to install, so that when a whole bath room is remodeled there will be four or five of them, each containing one of the fixtures. There is no wording in the folder except our name and address, opposite the cut. These folders are indeed neat and attractive.

During the past season, this plan has resulted in our receiving quite some remodeling work and has also shown the customer just what they were getting for their money.

West New Brighton, N. Y. W. E. Heap.

Advertising Repair Trade.

Please find enclosed a 100-word letter that I found very satisfactory in advertising the Plumbing Repair Trade. The Bibb washer was tied on a shipping tag printed as below and mailed out to new customers.

Please accept this washer as a gift from the W. T. Plumbing Co. Put it on your leaking faucet, as leaking and dripping faucets waste water and cost you money. All water wasting cost you something. If you cannot fix your leaking plumbing satisfactory, just call Phone M5210 and I will fix same satisfactory, at a small cost. All repair work given special attention *anytime*. All work done by experienced mechanics at moderate prices.

Hoping to serve you in the future as I have in the past, if I have pleased you, tell your friends; if not, tell me.

"Down South."

Don't Itemize Repair Bills.

Itemized bills for plumbing and heating repairs consume a vast amount of time. We don't do it. We use the workman's repair charge slip as a day book, then bill in duplicate, describing the work done, and carrying out the price as first computed on the workman's charge slip. The duplicate is filed away as a sales journal sheet. Invoices, duplicates and workmen's charge slips are numbered in triplicate. We have billed over 2,500 jobs in this manner during the year 1919 and have had less than 10 requests for itemized bills.

Here's a Good Idea.

Almost every heating boiler in this city is equipped with a coil which is connected to the hot water tank. These coils fill with lime and seldom last more than one year. We have pleased a number of our friends by installing a compression shut off valve in the supply line to the tank. We also make a duplicate coil for them and hang it in a prominent place in the boiler room. Then when the coil begins to leak, it is possible for the man of the house to merely turn the little wheel handle, thereby shutting off the water to the tank. The plumber comes out and installs the coil that is ready for him and takes the old one back to the shop, makes a duplicate when he has the time and delivers it to the same old hook in the boiler room ready for another break. This gives a supply of cold water, does not interfere with the fire, does not necessitate a RUSH order for a plumber, and gives the plumber a chance to put in profitable time in the shop instead of killing time when the rush jobs are completed. W. W. Hughes.

Makes Plans to Scale.

The plan that I take to make money out of the heating and plumbing business is to make a plan to a scale. For heating, I make basement plan and show location of boiler and pipe lines and sizes of same. On other floors location of radiators and sizes of valves and the amount of square feet each contains and the height of radiators. Make specifications and mention make of boiler and

radiation that you will install if you are awarded the contract. If you are not the low bidder you will have a good chance for the contract anyway.

Wm. Foulk, Bellefontaine, Ohio.

Give Service at Reasonable Profit.

One hundred words! Evidently you do not believe in brevity! Honest advertising backed by prompt and efficient service with a complete stock and competent help. The making out of tickets by the employe on the job and the checking off and signature of those getting work done.

The desire at all times to give your customer the best of your years of experience at a reasonable uniform

IN OUR BUSINESS RELATIONS

Have we done anything we ought not to have done; or left undone anything we ought to have done?

If so, please let us know fully and frankly. We are anxious to correct any misunderstanding that may have arisen in the past or might arise in the future. Don't simply "*Let It Go*." We would rather investigate.

Personal information on such subjects will have my careful attention.

F. E. BUMSTEAD

Plumbing and Heating

414 EAST DALE STREET COLORADO SPRINGS, COLO.

profit; insistent upon your own rights no more than upon the rights of others.

Upon this basis my husband has built up a very satisfactory business.

(Mrs.) Minnie J. Bumstead,
Colorado Springs, Colo.

The Salesman's Corner

THE EXPERIENCES OF MIKE QUINN.

By George T. Harvey of the Ralph E. Weeks Co., Scranton, Pa.

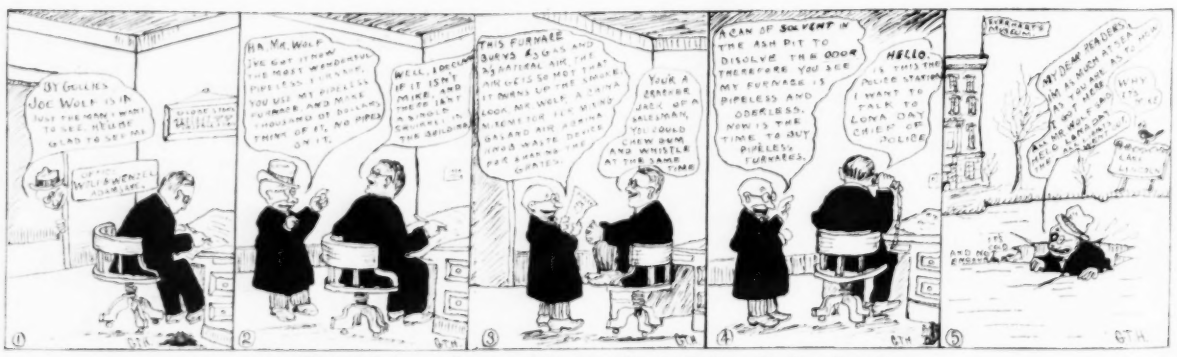
Mike sold groceries for some time on the road, but thought he would change his line and was finally offered a good position selling pipeless furnaces. Mike thought that all he needed on the road was ability, but he was wrong. He should have something to sell, some definite, tangible line of goods. However, Mike knew how to approach the most fastidious customer, how to bridle his attention, harness his interest and then lasso his order. But Mike always went backwards at his customer. If the buyer happened to ask him, at the end of a two-hour heated pipeless discussion, what his line was, it would be embarrassing for him to have to reply: "I don't know, but it has no pipes attached to it."

He was like a man selling safety razors who thought they were small carpet sweepers for apartment houses. This salesman one day tried to sell a woman one of his safety razors, thinking of course that they were little carpet sweepers. She was a rather masculine looking woman, but she didn't need to have anyone call her attention to it. The salesman, holding up the safety razor, said: "Madam, this is just what you need." That was all he said, but it was enough to net him a six months' course in the hospital and a fairly accurate knowledge of the difference between a carpet sweeper and a safety razor. The moral of this story, of course, is: "Know what you are selling and be able to side-step trouble, without losing your sale."

In approaching a prospect, Mike always did so in a way that his prospect could not hide when he saw him coming, or have time to drop out of sight, Mike always entered his prospect's store or place of business through the door, not the transom or chimney. He never walked up and down in front of the store a dozen or more times before making up his mind to enter. He always went right to the door and opened it in a determined business-like manner, closing it firmly after him and was sure he was all the way in before he closed it, never slamming it so hard that it jarred the ledger out of balance. Mike claims that the opening and closing of a door indicates character. Whenever you see a man sort of squeeze through a door so that it scrapes the buttons off his coat, you want to sew up your watch pocket and hide the cash register. Mike knows how to get his man's attention, and he is the only salesman I know of, who can keep on talking his line when his customer isn't listening. He's got his talk down so fine that he doesn't even listen to it himself. It goes right ahead without his assistance, and he can talk his pipeless furnace and converse on some other subject without interrupting himself, and nothing can stop him unless it has got substance to it and is well aimed. I met Mike at Wolf & Wenzel's office the other day talking to Joseph Wolf, the senior partner of the firm, and you can see the results by the accompanying sketches.

Clearing Up A Mystery.

Here is a gem of purest ray serene which Robbin Legge has fished up from the dark unfathomed caves of a new vocal method: "The register of the head voice results from the aretenoid cornes, which are approximated, and thus leaves only a limited space for the passage of air through the interligamentous glottis. By this means a contraction takes place in the interarytenoid glottis when the interligamentous glottis is undergoing relaxation."—"Musical Courier."


BY GOLLIES JOE WOLF IS IN JUST THE MAN I WANT TO SEE HE'LL BE GLAD TO SEE ME
HA MR WOLF I'VE GOT IT NOW THE MOST WONDERFUL PIPELESS FURNACE YOU EVER SAW
WELL I DECLARE IF IT ISN'T MIKE AND THERE ISN'T A SINGLE PIPE CONNECTED TO THE BOILER
THIS FURNACE BURNS ASHES AND THE MATERIAL AIR THAT AIR GETS SO HOT THAT IT RISES UP THE CHIMNEY
YOUR A DEMON JACK OF A SALESMAN, YOU COULD CHEW GUM AND WHISTLE AT THE SAME TIME
A CAN OF SOLVENT IN THE ASH PIT TO DISSOLVE THE DOOR THEREFORE YOU SEE MY FURNACE IS PIPELESS AND DOORLESS. NOW IS THE TIME TO BUY PIPELESS FURNACES.
HELLO... I WANT TO TALK TO LONA DAY CHIEF OF POLICE
EVENING'S MORN
AND NO PIPES

How "Mike" Quinn, a Grocery Salesman, Started Selling Pipeless Furnaces.

LEGAL QUESTIONNAIRE

Can Plumber be Held Liable for Defects That Develop in Heating System, Where He Has Been Ordered to "Turn Water On?"— This Question is Answered in a Most Careful Manner *

By "The Judge"

Liability of Plumber for Defects That Develop in System Where He Has Been Ordered to "Turn the Water On."

Editor "Domestic Engineering":—About April 15, 1919, a woman called me to put in shape for renting, a house which she owned but did not live in. We found several pipes which had been split by freezing the previous winter, and did the work.

On January 12, 1920, about eight months after we had done the work the owner of the house claimed that the house was never rented, that in the winter of 1920 the boiler and pipes had burst because water had been left in the pipes, and that we are liable for damages. We claim that we had orders in April, 1919, to put the premises in shape for a tenant and that nothing was said in regard to draining the pipes for the following winter.

In a great many cases the plumber does not know the condition of pipes in walls and out of sight. I always do the best I can and tell people I cannot guarantee results.

B. W. J.

Answer:—On the facts presented, particularly if you stated you could not guarantee results but would do the best you could, I do not see that you are responsible for the damage done eight months after you did your work. This would be so, especially if the bursting of the pipes in January, 1920, was the result of freezing because water was allowed to remain in the system and freeze.

In such cases the owner of the house, if she has any grounds for a claim against you, has two courses which she might pursue. One would be to claim that you had broken your contract with her and the other is a claim for negligence. The latter claim would be based upon the alleged fact that you owed to the owner the duty of doing a certain thing with reasonable care and that you had not performed that duty or that, if you did perform it, that you had been negligent.

Now let us assume that you had entered into a contract with the owner to turn the water on and put the plumbing system in shape for tenancy, and that nothing further was said about your not being willing to guarantee the work. The answer to the question whether you had carried out this contract, and therefore were not liable for what happened later, would depend entirely upon the facts in the case; this is, whether, at the time you left the job, you had done all that you agreed to do.

Where nothing had been said about possible defects in the piping which was concealed behind walls, I suppose that it would be the duty of the plumber to subject the entire system to a test which would bring to light any weak spots in the plumbing. If such a test should be made and no leaks discovered, the plumber would probably be relieved of any liability for defects which developed later. In many localities the chemical properties of the city water is such that certain kinds of pipe do not last very long. If the water, in the case you mention, would ultimately cause leaks, you could hardly be held liable for defects which developed after you had finished the job.

Let us suppose that in your own case, the owner brings suit against you for breach of your contract, and you show, by your evidence, that after you had repaired all visible leaks, you subjected the system to a test which would have brought to light any invisible weaknesses which were in existence at the time. There could hardly be a verdict against you under such circumstances. On the other hand, if the owner should introduce evidence to the effect that at the time you left the premises a weakness existed which would have been discovered had a proper test been made, it might well be held that you had not performed your agreemnt to put the plumbing in shape for use by tenants. This is assuming, of course, that nothing had been said about a guarantee in the matter, and also, that the damage was not caused by the freezing of the pipes.

The answer to your question depends further, upon the fact whether the defect, which caused the damage, would have been discoverable by a reasonable inspection of the system. If it could be proved that at the time you did the work a joint section or fixture was in such shape that any reasonable man would have anticipated a break in the space of a few months, there might be ground for holding that you should have notified the owner. In other words, you could hardly be held to have performed your agreement to "put the plumbing system in shape for use," if you should have discovered the defect by a reasonable inspection.

Much the same reasoning would be pertinent to the case if the owner should sue you for your negligence. Negligence is a form of *tort* action. A *tort*, speaking broadly, is a wrong which one person does to another, either by an act or a failure to act. To commit a *tort* against another, a person must owe a duty to that other person which he has failed to observe or perform. In an action by the owner against you for negligence, in your case, the determination of what duty you owed to her would depend mostly upon what your agreement was, although it might also be influenced by trade custom in certain instances. Sifted down to the last degree, the question of your liability would depend upon the fact whether you had negligently performed what you had agreed to do. This fact of negligence, therefore, would depend upon the actual agreement which you made and whether you had carried it out as a reasonable man. You would not be liable for everything that might happen to the plumbing system, but

*Every Effort is made to the End that these Answers may be authoritative. However, we cannot assume any Responsibility because of the very Nature of the Service, which is rendered without a personal Interview.—Editor.

only for such damages as could be traceable to some act or failure to act on your part, which damages, as a reasonable man you should have anticipated. In the case of a water supply which contained chemicals which would ultimately make a brass pipe look like a sieve, you could relieve yourself of all liability for defects developed by that condition, if you should state to the owner, that although the system was in a safe condition at the time you finished your work, it would probably not last very long. On this branch of the matter, I might add that a man does not guarantee his work for the future years against all possibilities, but he is held to a liability for damages where it is shown that he was careless or negligent.

If, having much work on hand, you should send a helper or an apprentice, to do work, and damage resulted, which, it could be proved, would not have happened if you had used a regular plumber who would have discovered a defect or should have discovered it, because of his larger experience, you would probably be held not to have performed your entire duty to the owner.

It may be that you will be of the opinion that this answer contains many "ifs" and is not very definite. This is naturally the result of the fact that I do not know all of the facts in your case, and do not even know what caused the bursting of the pipes. I am therefore obliged to cover the situation in a very general manner.

Your statement that nothing was said about drawing the water from the pipes for the following winter, would lead me to believe that probably the damage was the result of freezing. If so, there can be no liability on your part unless you agreed, or should have understood from what was said, as a reasonable man, that you would turn the water off in time to escape dangers from freezing the following winter. Without doubt there was no such understanding. An order from an owner to put a plumbing system in shape for tenancy, in the spring, without any further understanding, certainly does not put you under any obligation to keep in touch with the situation and turn the water off if the property is not occupied by a tenant. There would be nothing in such a situation which would impose upon you the obligation to guard the owner's premises against damage the following winter. If such is the owner's contention, I should not worry at all about the matter.

IDEAS THAT MAKE MONEY IN SELLING WATER HEATERS.

By W. D. T.

TO the plumber who has or has never pushed gas water heaters, we say: Plan for the whole year. The price of success expressed in crisp terms is "Eternally at it mighty hard."

Begin with your display floor—brighten up and show a representative line of gas water heaters for demonstration purposes.

Then, know your goods. This only requires application—study and inquiry. Visit the factory if you can. Get and read easily obtainable manufacturer's literature. Write him about features not clear. The salesman in your territory will willingly talk to the boys in the shop on every phase of the water heater business.

Having "set your own house in order," tell your prospects what a good thing you have—do not hide your light under a bushel—tell it to your neighbors.

That is advertising—newspaper copy, form letters—the movies—personal calls, over the telephone—every conceivable way you can tell your story effectively—getting your hot water message into the ears of interested hundreds who will buy because they need the service.

How much to spend on advertising? That depends on what you desire to accomplish. Many dealers estimate the appropriation should be between 1 and 2 per cent of the gross business. Spending $200 on thoroughly working out well-laid plans will invariably get you better net returns than spending twice that amount and only half tending to essential details. Analyze the possibilities—plan and carry out your plan.

Get a prospect list, in card form, alphabetically arranged. Use every means at hand to list all home owners who can afford and do not now enjoy hot water service in their homes. Not a hit or miss list out of the city or telephone directory. Spend a little time investigating each name; drop them a return card perhaps, to find out for sure if they have gas, a bath room and running water, and how they heat it. It will pay to make your list a winner and the manufacturer will then be glad to help you cash in on it with form letters and mailing folders.

Newspaper advertisements and readers—run weekly, small or large according to the season, are recommended. "Ready made," "semi fit," "adjustable" advertisements carefully designed in size and style to meet dealer's needs. See that every user is pleased—learn their opinions—start a sales scrap book with customer's letters—pictures of successful jobs—users' opinions—information of all kinds. Use it all in making sales—fine material for your newspaper advertisements.

Window Displays: Do not neglect one of your most important, costless, priceless advertising mediums. Keep windows clean and attractively trimmed—change often—show one line at a time, with cards to tell the story at a glance and make the passer buy.

Special Sales: Just good merchandising strategy, concentrating for a short time in specially planned effort to accomplish certain definite results. "A year's business in a week" can be made an actual fact—not by magic, but by simple effective planning and close co-operation of all concerned.

Not an invoice, not a letter, should leave the plumber's office without carrying with it an advertising message. Ask for folders for enclosure on any type of heater you wish to sell—automatic, bath or circulating tank heaters—a size and style for every hot water need. Gas water heaters are now known to be valuable, not only for a season, but all the year around. Every member of the family—from baby to grandma—soon agrees to that.

Keep in touch with present users—make every installation work for you. If you know your goods and your men know how to install them—troubles are eliminated—every user is a booster. The question of "high gas bills"—remind your man that he burns gas to get hot water service. Tell him also that gas is about the only commodity that has not hit the sky—it is the cheapest and cleanest fuel for the purpose. Get actual operating costs over several months and make doubters face facts.

According to a statement issued in New York City by the Inter-Racial Council, nearly 1,000,000 foreign-born laborers have left the United States for Europe since the armistice was signed, and 1,000,000 more will depart as soon as passport regulations are made less strict.

According to Lloyd's Register, the United States launched 4,075,385 tons of vessels in 1919, or 57 per cent of the world's total, amounting to 7,144,549 tons. Both figures are records. The United Kingdom launched 1,620,442 tons, 272,422 more than in 1918, but 16 per cent below its record of 1913.

QUESTIONS & ANSWERS

TOO SMALL PIPING AND POOR VENTING TROUBLESOME IN HEATING SYSTEM.

Editor "Domestic Engineering":—The accompanying sketches show a coil, which does not heat. I connected it first as shown in Fig. 1, but it did only heat top coil and from branch tee down to ells. I tried air vents at "A," "B" and "C" and it made no change, then I inserted a ⅛-inch tube and air vent at "D," putting the tube down between the bottom and the next pipe without results.

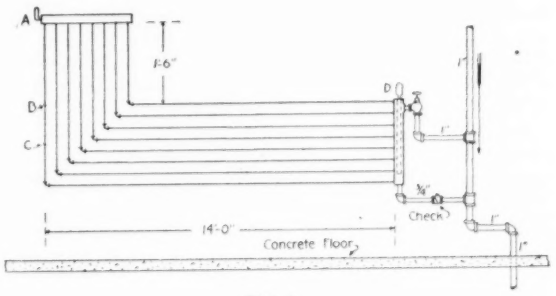


Fig. 1.

Next, I connected the coil, as shown in Fig. 2, with the result that the two lines heated and the uprights heated down to the ells as before. I also tried air vents at "A," "B" and "C." In both cases the return line leading under the floor got hot.

The coil is made of 1½-inch pipe.

Chicago. W. V.

Correspondent's trouble is due to the manner of venting, drainage, and to the small size of the piping used. The sketches, Figs. 1 and 2, submitted show that the coil is

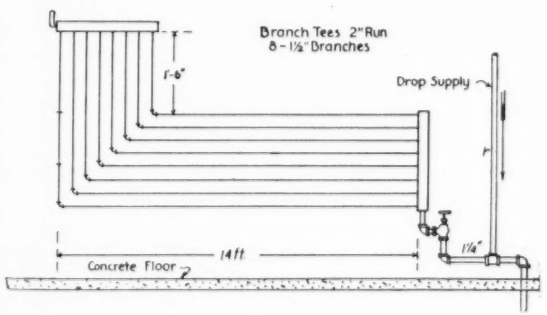


Fig. 2.

supplied at the wrong end to get good results from it. As illustrated, the coil is shown in a position such as is sometimes used when a one-pipe connection is made but when so connected the supply pipe should be of generous area and good drainage of the condensation should be assured by connecting the drip in such a manner that it will carry away the condensation without interfering with the supply.

A coil of this size and length should be connected two-pipe, and we show by Fig. 3 the proper method of making the supply and return connections. The position of the air valve is shown at A. The drop supply may be connected as shown and the condensation in it drained through the coil, or a tee may be used in place of the elbow at B and a ¾-inch drip connection made as shown

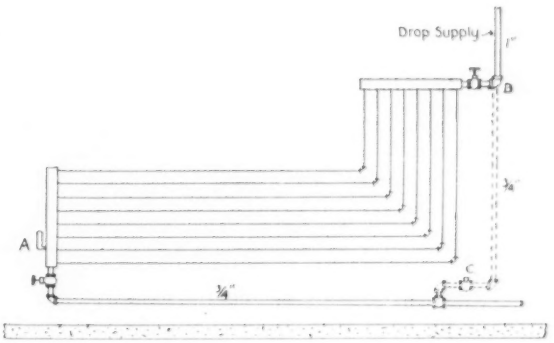


Fig. 3.

by dotted lines. In this event a light weight swing check valve should be placed in the drip line as shown at C.

ESTIMATING FUEL REQUIREMENTS.

Editor "Domestic Engineering":—A man rented a large hotel and signed a lease providing that he is to supply heat to all the stores and offices in the same building. The lease, however, provides that no more radiation is to be added to the building until the expiration of the lease. But recently the owner of the building added 140 sq. ft. radiation to one of the stores.

Will you tell me how much soft coal it will take to heat the additional 140 sq. ft. of radiation, with the pressure on the boiler at all times from 2 to 5 lbs.?

Minnesota. P. J.

Estimating fuel requirements is at best an uncertain procedure, as the amount of fuel used depends upon so many varying conditions. Any figures given must of necessity be approximated.

The U. S. Treasury Department allows 5 tons of coal per sq. ft. of grate for a heating season of 240 days, or one pound of coal per cu. ft. of contents of the building warmed for the same period. In some localities the heating season is estimated as being 210 days which fact would lessen somewhat the figures given.

We may estimate fuel requirements on a heat unit basis by considering the following factors:

One sq. ft. of radiation surrounded by still air at 70 de-

grees will give off 250 B. t. u. (steam) with the pressure at 2 pounds or 220 degrees. There are approximately 5,800 B. t. u. available from each pound of soft coal burned in an ordinary heating boiler (not down draft).

140 (sq. ft. of radiation) $\times$ 250 = 35,000 B. t. u. per hour.

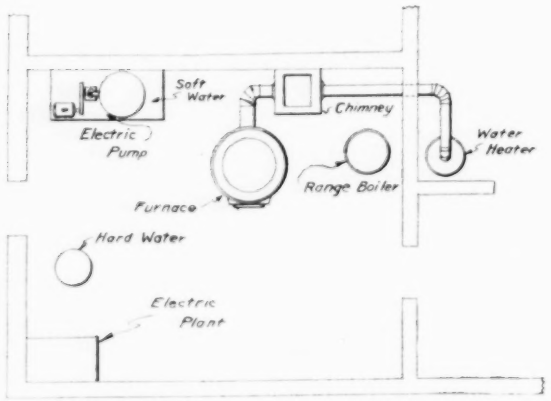
35,000 $\div$ 5,800 = 6 (pounds of coal burned per hour).

24 $\times$ 6 = 144 pounds of coal for a 24-hour day.

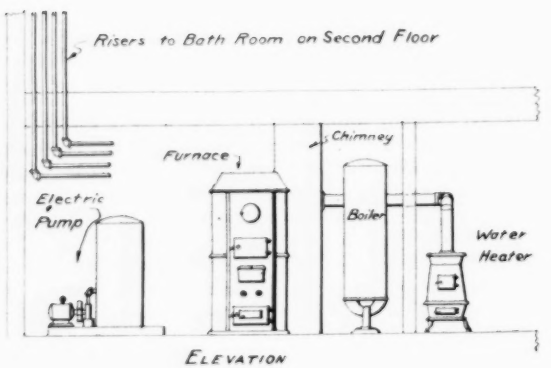
The above is the maximum for zero weather requirements. When the average winter temperature is considered, and a shorter heating day or lower night temperature, it is probable that the actual requirements for 140 sq. ft. of radiation will not average more than 3 or 4 tons of soft coal for the heating season.

COMBINATION SYSTEM OF PLUMBING, USING SOFT AND HARD WATER.

Editor "Domestic Engineering":—A customer wishes a range boiler connected to a laundry water heater and furnace. Will you kindly tell me the best way to do it?



PLAN VIEW OF BASEMENT



ELEVATION

Fig. 1.

Figure 1 is a rough sketch of the manner in which I intended to do this work.

Do you recommend a pressure relief valve on this job?

Iowa. H. G.

We assume that the intention is to set the range boiler down in basement near the furnace as "H. G." shows it located there in his sketch, Fig. 1. We note that he has two sources of cold water supply, namely, soft water, presumably from cisterns, and hard water, presumably from a shallow well outside the building.

There is an electric plant set in the corner of the furnace room; also a hard water tank standing alone, and a soft water tank located close to an electric pump.

The laundry heater is located in the laundry, and no doubt is used for heating irons as well as for heating water in the range boiler, but no kitchen range is shown or mentioned. Therefore, we surmise he does not intend to heat the boiler from a kitchen range, only from the laundry heater and the warm air furnace. He shows four risers running from basement ceiling for bathroom. We imagine there is a cold hard water riser, a hot hard water riser, a cold soft water riser and a hot soft water riser. Perhaps we are wrong in our conception of his sketch, and, if we are, we kindly ask him to set us right so that we may in a future issue of "Domestic Engineering" correct any misconception or error we may make just now.

We understand he has but one pump to fill both tanks, and that he wants the system arranged so that he can supply the system from either source as he sees fit. In piping this building, we suggest that he run soft water only to the laundry, soft and hard to the kitchen sink, soft and hard to the bath, and hard water only to the closets and garden hose, if any. We make these suggestions on the supposition that his soft water is a scarce commodity, being perhaps rain water collected in cisterns, and that his supply of hard water is abundant, but undesirable for washing purposes where soap is required. There are, of course, different ways of doing this work, different contractors having their own methods.

Perhaps, however, an arrangement similar to Fig. 2 is about right for this particular case. At least it should give reasonably good results, if operated intelligently. Note that two suction pipes both connect to the pump. One comes from the soft water cistern, the other from the hard water well. Each is valved at the pump. Also note that the pump has two discharges. One goes to the hard water tank, the other to the soft water tank, but each is valved below the single pump header in such a manner that the valves are near the suction valves. The valves are arranged this way so that they may be operated in pairs, in unison. That is to say, when soft water is to be pumped the suction and discharge soft water valves should be opened and the suction and discharge hard water valves should be closed. Indeed this opening and closing of these valves in pairs will be quite frequent as first one tank will be filled, then the other independently. It would appear to be a good plan to have some distinguishing feature in connection with this system so that the owner may know which pipes are for hard water and which are for soft water. We, therefore, advise painting, say, the soft water valves and piping a certain color—red for instance allowing the hard water piping and valves to remain unpainted. This will enable the owner to operate the right valves at the right time.

On the pump discharge header we take off the usual small pipe connection to the automatic switch. We cannot very well take it off the tanks as their pressures will necessarily vary.

In the position shown the pump will be automatically controlled reasonably well, no matter which tank it is pumping into.

On the header we also place a pressure relief valve to blow off excess water, should the auto switch fail to work. This will prevent a too high pressure from being raised in either tank.

Note also that we show a check valve on the soft water supply to range boiler. That is to prevent hard water from being backed up into the soft water piping, should both cold supply valves on top of boiler be inadvertently left open.

To prevent damage to the boiler by expansion when hard water supply valve is shut, a pressure relief valve is attached to hot water piping at top of boiler.

These two relief valves should ensure perfect safety in all parts of the system.

We have laid out the piping so that there is a cold soft supply line to house, and a separate cold hard supply line to house. But as only one boiler is to be used we show only one hot water supply line to fixtures. The boiler may be fed from either soft or hard supply. We prefer the former, as the hard water is liable to encrust the heaters and cause trouble. But in the event of a shortage of soft water the hard water supply may be turned into boiler temporarily.

We think this is about as good as can be done in the existing arrangement.

If there is much chance of hard water being fed to the boiler frequently we advise the installation of a water softener attached to the feed water line near the boiler so that the lime or magnesia in the water may be precipitated in the boiler instead of encrusting the heaters and their connections. The precipitate can then be washed out through the sediment cock periodically.

By the circulating arrangements shown in Figs. 2 and 3, it is evident that either or all heaters may be fired at any

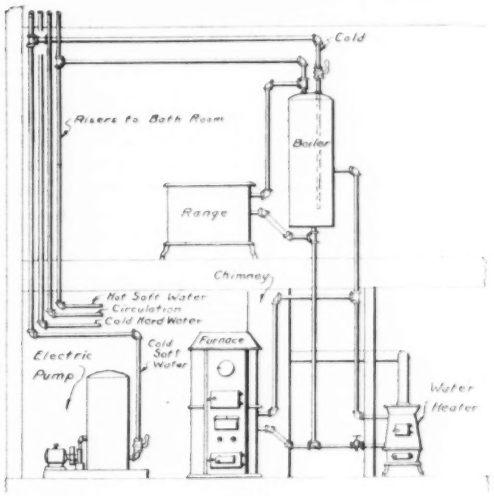


Fig. 3.

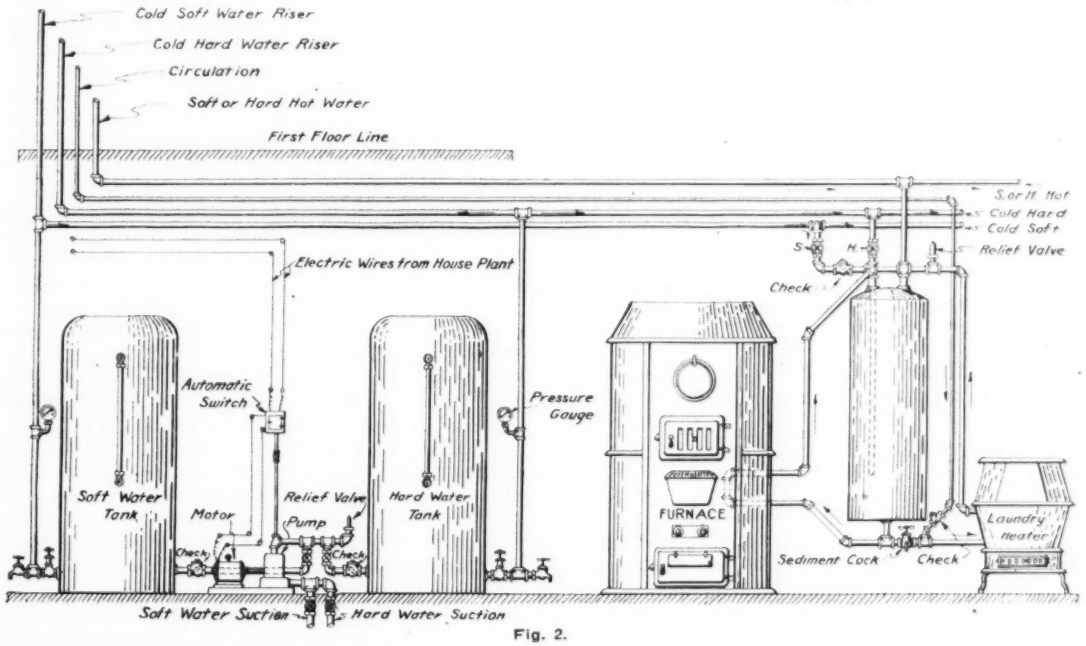


Fig. 2.

We show the hot flow pipes from laundry heater and furnace coil both connected at top of boiler to the hot supply line with a 1-inch cross. Probably the side connection of boiler is too low to take these flow pipes properly.

No mention is made in correspondent's letter about the cook stove in the kitchen above, being used to heat the water during summer, when furnace and laundry heater are not in use. In case it is necessary to do this, we venture to suggest range and heater circulating connections somewhat like those shown in Fig. 3.

Of course the valving should be done similar to the arrangement shown in Fig. 2 for convenience in changing over from soft to hard, or vice versa, if boiler has to be fed with hard water at times. In this sketch we set the boiler on first floor, as we do not approve of placing it in basement, when it has to be heated by a range on first floor.

time without valves on the circulation lines. They operate automatically when the fires are started.

SEPTIC TANK AND SEWAGE FILTER TO SERVE TEN PERSONS.

Editor "Domestic Engineering":—The writer has been very much interested in the articles which appeared in the November 8th and November 15th issue, in reference to the design of a cistern for sewage disposal.

The writer is building a residence and desires to use this design, changed for his wants, and would like your advice on two points. With eight in the family, the writer will cut down the depth of the wells just one-half.

I would also like to have your advice as to the question of running into these wells the waste water from the kitchen sinks.

Pennsylvania. V. M. G.

The septic tank referred to by "W" is shown on page 267 of the November 8th issue of "Domestic Engineering," and is based on a 12-hour retention. That tank has two concrete pipe chambers, each 30 inches inside diameter and 9 feet deep. The depth of water standing in these chambers is 8 feet. That, however, was designed for 25 persons on a 12-hour retention basis.

We think you will obtain excellent results, if you just leave out the middle section in each of the two chambers. You will then have 5 feet depth of water, which should be quite satisfactory for a family of nine, and a few occasional guests.

The area of each filter bed may be reduced nearly one-half. Its depth should, however, remain the same.

The siphon should be the same size. The diameter of siphon chamber may be reduced by using a 24-inch pipe instead of a 30-inch pipe. The area of the 30-inch siphon chamber is 706 square inches. That of a 24-inch chamber will be 450 square inches. In fact, you can get along with a 21 or 22-inch pipe for siphon chamber, but we prefer 24-inch pipe in your case.

The waste water from kitchen sink is intended to be run into the tank. The tank is figured large enough for that, but you should install a good cast iron or brass grease trap on the kitchen sink waste pipe.

It is considered bad practice to run greasy water from a kitchen sink, into a septic tank, as the grease interferes with the proper biological action of the tank.

SEWAGE LIFT WANTED FOR SEPTIC TANK.

Editor "Domestic Engineering:"—We have a problem in sewage disposal. Is there any device made in the line of a cellar drainer that will take care of eight or ten closets?

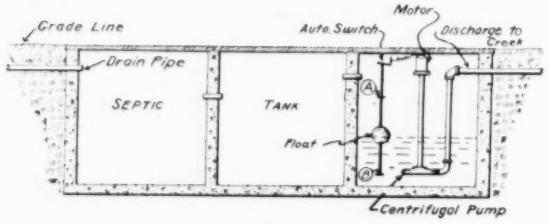


Fig. 1.

There is no sewer, and the water is within 10 feet of the top of the ground.

Fig. 1 is a sketch of what our idea would be.

Omaha, Neb. L. S. F.

If there is sufficient fall from sewage tank to creek, you may use a sewage siphon and get along with a gravity discharge.

If, however, it is necessary to lift the sewage, then you can use a small centrifugal electric pump something similar to that used to lift subsoil water.

We have drawn such a pump on your sketch to show how the installation may be made. In this installation the motor must be well above the highest possible water line. It may be direct connected to a centrifugal pump with, say, 1½-inch discharge.

The automatic switch and all wiring should also be above highest water line. This switch must be worked positively such as by a float. The suggestion given in Fig. 1 has the float with a tube through it. The switch rod is inside this tube. The float rises and falls with the effluent in this tank. When float engages with collar "A" on the rod, that is, when the tank is full, the switch is thrown in and pump soon drains out the accumulated effluent from the septic tank.

As soon as pump chamber water line has fallen so that float engages the lower collar on rod at "B," then the weight of float will throw out the switch and motor will stop.

Thus an electric driven centrifugal pump of small size will do the work, as you can use an ordinary cellar drainer or water ejector.

The effluent from the septic tank should be comparatively clear, and free from solids. We see no reason why you cannot install an ordinary cellar drainer operated by water pressure. It may use about 1-6 of the total water discharged, and you can figure if your water supply can stand that. Suppose the closets are all discharged 6 times each hour, that is once in ten minutes each, which we would consider severe service, then the total sewage to be discharged is about $6 \times 5 \times 6 = 180$ gallons per hour.

An ordinary cellar ejector should easily discharge 300 gallons or more per hour under the low head you show. Therefore we feel you will be quite safe in using any of the cellar drainers or automatic bilge pumps you see advertised in "Domestic Engineering."

WHY WALLS AND FURNITURE BECOME MOIST.

Editor "Domestic Engineering":—We note in your January 17th issue, a request by G. W. D. regarding vapor forming on walls and windows in a house heated with natural gas. We are, therefore, giving our experience in this respect which may help in some way.

A few years ago we installed a hot water plant in a house located on the side of a hill, about half way from the brow of the hill. The house was constructed of hollow tile, cemented on the outside and plastered against the hollow tile on the inside. When the heating system started to warm up, the walls started to sweat to such an extent that the water formed puddles on the floor around the outside walls.

Our opinion was that the hollow tile walls, being of porous construction, drew up the water, and due to the uneven atmosphere between the race ways in the hollow tile, and the warming up of the room, the condensation occurred. Perhaps G. W. D.'s house is also one of hollow tile construction.

West New Brighton, N. Y. W. E. Heap.

Assistant Secretary Leffingwell, of the Treasury Department, January 27th, stated before leaders of both Houses of Congress that the financial affairs of the world are in a deplorable state, and that the United States soon may have to extend further large credits to other nations to protect its own interests.

The Director of Purchase and Storage announces that the wool purchasing quartermaster of the United States Army, located at Boston, reports that during the week ending January 10th, his office sold 9,824,140 pounds of wool from surplus stocks on hand in the army. The amount realized by the sale of wool during the week was $4,813,511.25.

The London Times, January 30th, is quoted as advocating the enablement of distressed Europe to start up industries again, so that it can export goods. This can be done, it says, by loans from creditor nations, and the loans preferably should be raised through public subscriptions. America cannot be expected to increase her loans to Europe until unmistakable signs are forthcoming that Europe is taking adequate steps to set its own finances in order.

The TWENTY-SIXTH ANNUAL MEETING *of the* AMERICAN SOCIETY *of* HEATING *and* VENTILATING ENGINEERS

Held in New York City, January 27th, 28th and 29th, Was One of the Most Successful Meetings in the Society's History

THE twenty-sixth annual meeting of the American Society of Heating and Ventilating Engineers was held at the Engineering Societies Building in New York City on Tuesday, Wednesday and Thursday, January 27th, 28th and 29th.

The reports of the officers and council reflected the greatly increased activities of the society during the past year. With this the work of the administration had been greatly augmented over what former administrations of, say, five and ten years ago had experienced, and Walter S. Timmis, who at the close of the meeting turned the gavel over to President-elect Dr. E. Vernon Hill, can be justly proud of the manner in which these added burdens and responsibilities had been met by himself and associates.

The Research Bureau of the society is now an actual functioning institution, in witness of which Director Allen presented some definite matter on radiation as the result of its work since its recent inception.

In this work is seen the great future of which the society has built the foundation in the establishment of the Bureau, and the successful heights in engineering to which it will be a privilege to the members to follow Dean Allen.

Tuesday Afternoon.

The meeting was formally opened at 3 o'clock Tuesday afternoon by President Walter S. Timmis. The session was devoted entirely to the business of the society.

The President's Address.

President Timmis, in his annual address, gave an interesting synopsis of the society's activities during the year just ended. He also called attention to the fact that 1919 might be designated as the first of the reconstruction years. "The society and its membership," he said, "have had to solve many problems. The year just passed began a few weeks after the armistice was signed and at that time the country was in a state of flux; no one seemed to know what to do. From a state of feverish war preparation, in which most industrial energy was focused upon winning the war, we were suddenly confronted with the problems of resumption of peaceful activity. Building for normal occupancy had ceased by legislative control of material and labor. The trend of prices was clouded in uncertainty—some expected large price reductions, some predicted higher wages, while others were disposed to wait. Stagnation of industry was the result. Several manufacturers of products in the heating industry revised prices downward from 15 to 33 per cent in order to stimulate activity. The Government inaugurated a "Build Now" campaign and made an earnest effort for resumption of normal activity."

He thereupon dwelt on the subject of securing employment for the returned soldiers and the necessity of counteracting revolutionary tendencies.

Next he gave an interesting account of his stewardship of the presidency and recommended the standing committees for their excellent work.

He also referred to the establishing of the Research Bureau.

The conclusion of his address was a condensed, but exceptionally valuable, history of the society from its beginning on August 2, 1894, when fifteen pioneers in the heating trade met in New York City to discuss organization, until the present date, when the society has a membership of more than 1,000.

Tellers Appointed.

Following the president's address, the election of officers was in order. George Bennett, Frank T. Chapman and L. B. McMillan were appointed tellers of the election.

The Secretary's Report.

Secretary C. W. Obert read the report of the council, which contained a concise resumé of the activities of that body during the past year. An important announcement of the council was that the society's journal, beginning with the current month, would be published monthly instead of quarterly.

Secretary Obert's report reflected the tremendous growth in the society's work and usefulness as well as the devotion of the officers in their successful handling of new and broader responsibilities.

Mr. Obert said, in part, that the year just closed has been notable for some epoch-making accomplishments and cited an increase of 30 per cent in membership, bringing the total well past the 1,000 mark. He pointed out that during the year there had been a total of fourteen active technical committees at work.

For Closer Relation Between the Society and the Chapters.

The report of a committee seeking the establishment of closer relationship between the society and the chapters recommended that an increase in membership dues for the society be adopted. Specifically an increase to $15.00 for full membership, $12.00 for associate membership and $10.00 for junior membership.

Two dollars of this increase to be applied to a chapter fund to be dispursed in the interests of chapter development and the remainder of the increase to meet the increase in the society's growing budget.

Under this new financial arrangement membership in the society will automatically carry membership of a chapter for

each individual without further chapter dues other than the nominal fees which may be exacted by the chapter for local expenses.

Constitution to be Revised.

This program was adopted unanimously on Thursday, together with other proposed revisions to the constitution in a report presented by Dr. Hill as chairman of the Committee on Revision of Constitution. The revisions will be mailed to each member to be finally acted upon at the summer meeting.

Report on Automatic Roof Ventilators.

The committee on automatic roof ventilators reported that according to its findings, war conditions, with scarcity of coal and high costs of current, had stimulated interest in and prompted the extended use of such apparatus and the committee recommended that their use be governed by good engineering sense.

Dr. Hill pointed out that it is not proper to rate such ventilators on amount of air displaced. He said that tests at Chicago dictated their rating on the basis of the relation of velocity through the throat of the vent to the velocity surrounding it. The most efficient, he said, should be one which reaches its maximum capacity at a low surrounding velocity and maintains that capacity definitely regardless of increases in surrounding velocities.

The matter was referred to the Research Bureau for further investigation.

Report of Committee to Confer With Weather Bureau.

The Committee to Confer with the Weather Bureau submitted its final report through Chairman W. G. R. Braemer, summarizing the results of its conferences with the bureau as follows:

First.—The inauguration of simultaneous dry-bulb, wet-bulb and relative humidity readings observed at 8 a. m., 12 o'clock noon and 8 p. m., published in principal newspapers throughout the United States and such readings preserved in the record of the bureau.

Second.—The standardization in size and contents of a monthly summary report to be issued by forty to fifty stations throughout the country, beginning January, 1920, and its use to be extended to all principal weather bureau stations as fast as facilities will permit.

The newly adopted summary report contains among other features of much interest to manufacturers and engineers:

A.—Daily maximum, minimum and mean temperatures.

B.—Simultaneous dry-bulb temperature and relative humidity readings at 8 a. m., noon and 8 p. m. daily.

C.—Vapor pressure observed at 12 o'clock noon.

The Committee on Standard Form of Air Washers reported progress.

The Election of Officers.

Amid the applause of the assembly the tellers reported the following officers elected for the ensuing year:

President—E. Vernon Hill, 704 City Hall, Chicago.

First Vice-President—Champlain L. Riley, 101 Park Avenue, New York.

Second Vice-President—Jay R. McColl, 2348 Penobscot Building, Detroit, Mich.

Treasurer—Homer Addams, 47 West Forty-second Street, New York.

Members of the Council—Wm. H. Driscoll, 660 First Avenue, New York; Jos. A. Cutler, 117 North Dearborn Street, Chicago; A. C. Edgar, Newton Square, Pa.; Alfred S. Kellogg, 89 Franklin Street, Boston; George B. Nichols, Albany, N. Y.; R. W. Pryor, Jr., 29 Cortlandt Street, New York; Perry West, 32 East Forty-eighth Street, New York; W. S. Timmis, 315 Fifth Avenue, New York.

The session thereupon adjourned at 4.45 o'clock, until 8 o'clock in the evening.

Tuesday Evening.

In calling the first professional session to order at 8 o'clock, Tuesday evening, Chairman Timmis commented upon the enthusiasm displayed at the meeting thus far. He said it was more encouraging than at any previous meeting he could recall.

The first item programmed for this session was the presentation of "The Co-operative Movement" in an address by James P. Warbasse, president of the Co-operative League of America.

The First Fruits of the Research Bureau's Work.

The remainder of the session was given over to the presentation of two papers by Professor John R. Allen, director of the society's Bureau of Research, and the report of Chairman J. I. Lyle, of the Research Committee.

Prof. Allen's papers, "Heat Losses from Direct Radiation" and "Determination of Radiant Heat Given Off by a Direct Radiator," the latter presented with Frank B. Rowley as co-author, represent the first fruits of the newly established Research Bureau and are highly revolutionary in character.

The first paper is a compilation and analysis of many experiments made by different persons in an endeavor to show the effect which the changes in the shape and size of a radiator, together with the conditions of operation, have upon the heat transmission.

The second paper described the methods employed in an attempt to develop a correct theory for the heat transmission from direct radiators, and the results obtained in comparing the actual quantity of radiant heat given off by such radiators with the total heat transmitted.

Briefly described, the determination of the radiated and convected heat transmitted was accomplished by eliminating the convection process. On the theory that convection depends entirely upon the movement of air surrounding the radiator, and if the radiator were placed in a vacuum the heat loss by convection must cease, the units under observation were placed in a tank in which nearly complete vacuum was maintained. The heat then given off by the radiator must be truly radiant heat.

The results obtained by the experiments very closely checked results obtained by Stefan and Boltzmann's law governing the transmission of radiant heat, and the tabulated data on various sizes and heights of radiators and wall coils offered by the author show that many so-called radiators are not radiators at all, but convectors.

Roughly, according to these data an ordinary two column radiator gives off one-third of its heat by radiation and two-thirds by convection.

The papers proved highly interesting and were lengthily discussed. Professor Allen was given a spontaneous rising vote of thanks for his efforts.

Progress Report of Committee on Research.

Mr. Lyle's report dealt with the accomplishments of the Research Committee and the plans laid out for the administration of the Bureau's affairs.

The yearly budget, he said, will be so arranged that it will not exceed the subscriptions.

A report by Professor Allen was also appended to the committee report, in which the director spoke of the construction at the Bureau's headquarters of a constant temperature room and of special apparatus for the determination of heat losses through building materials and the determination of infiltration of air. He said, in closing: "The future will prove the great wisdom of the society in establishing the Bureau."

Adjournment was taken at 10:45 o'clock.

Wednesday Afternoon.

The third session of the meeting was opened at 2:30 o'clock Wednesday afternoon with the reading of a paper

by E. S. Hallett, in which he described an advance in Air Conditioning in School Buildings. This consists of ozonizing re-circulated air. Tests were made in a St. Louis school building which the author said proved the success of the theory. The device, as described, was also tested as a cooling apparatus in which the air is drawn through a series of ducts, the outer surfaces of which are sprayed with water much the same as air washing, though the conditioning water does not come in direct contact with the air under treatment.

In answering the questions of his audience Mr. Hallett said the proportion of ozone in air for proper ventilation purposes is probably one part ozone in one million parts of air to one of ozone in three millions of air.

President Timmis announced, at this point, that Mr. Lyle had been made honorary chairman of the Research Committee, having resigned as active chairman with the presentation of his report the previous evening, and called for a rising vote of thanks to Mr. Lyle.

A paper by Professor Allen and F. B. Rowley on "Tests to Determine the Efficiency of Coal Stoves" was read by Professor Allen, who said he had always thought the coal stove was a stove, but after making these tests he found a stove is not always a stove.

The gist of the author's findings is that there is little efficiency in coal stoves; they are in many cases put on the market by the pattern maker, so to speak, with only little attempt to determine their efficiency.

Dehydration and Drying.

Two excellent papers on "Dehydration" were read in which the authors pointed to the developments in food drying and what might be expected for the future.

The papers were: "Recent Developments in Drying," by C. E. Mangels, of the Division of Dehydration of the Bureau of Chemistry; and "Dehydration," by Dr. R. H. McKee, chemical engineer, of Columbia University.

Dr. McKee explained the use of the comparatively new vacuum system of drying.

School Ventilation Discussed

"The Status of School Ventilation in the United States" was freely discussed at this session. Interest in this topic arose at the last meeting out of the controversy over natural versus mechanical ventilation and thirty answers to a question on the subject, sent out by the society, were read. These answers were mostly favorable to mechanical ventilation.

Mr. Cooper told of a trip through Minnesota and said it was astounding to find how few existing mechanical plants were being operated. This statement was borne out by others who related similar findings.

Adjournment was then taken until after dinner.

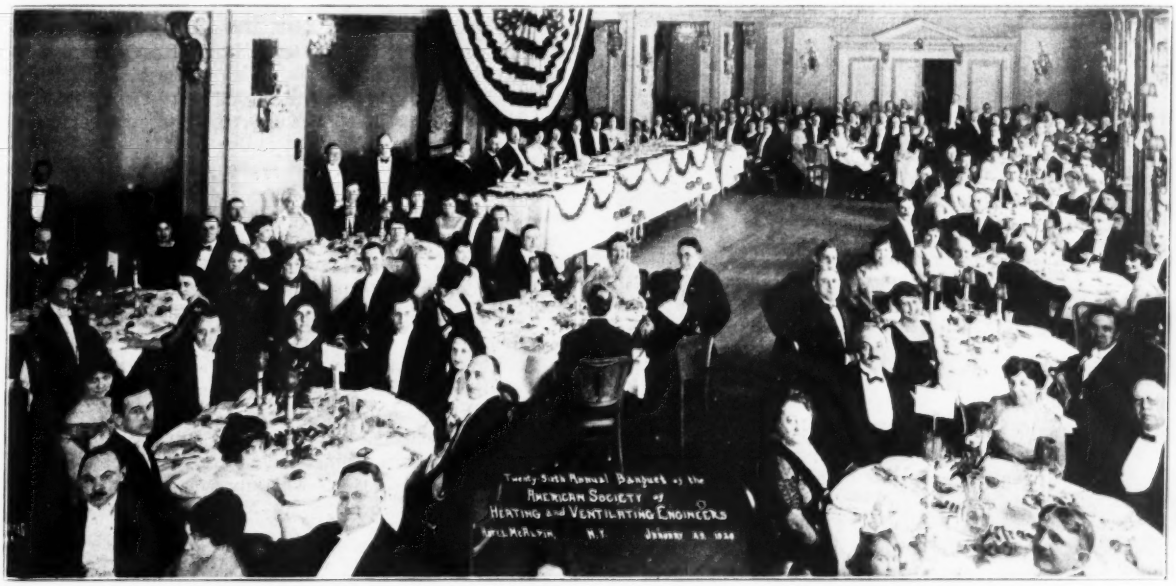
Wednesday Evening.

The Wednesday evening session was devoted to heating boilers, the subject being opened by three papers, as follows:

"The Magazine Feed Boiler and Fuel Conservation," by Charles F. Newport.

"Development of the Magazine Feed Boiler," by E. C. Molby.

"Relation of Boiler Heating Surface Area to Boiler Capacity," by P. J. Dougherty.



The Twenty-Sixth Annual Dinner of the American Society of Heating and Ventilating Engineers, at Hotel McAlpin, New York City, January 29, 1920.

The discussion turned on the matter of chimney design and construction. It was agreed that the magazine type boiler could not be used without sufficient flue area, and more consideration to proper flue area would in many instances have to be given in the future.

Mr. Howell presented a written discussion on the subject in which the point was brought out that all boiler manufacturers' catalogues take care of flue areas, but even when such data are taken into consideration in design the bricklayers do the work incorrectly.

Action was taken referring the matter of flue areas to the Bureau of Research for investigation.

A late adjournment was taken.

Thursday Morning.

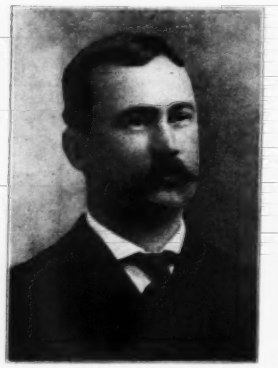
Following the presentation of an interesting paper by F. N. Speller and W. H. Walker, covering "Four Years' Experience in Prevention of Corrosion of Pipe," in which many enlightening data and exhibits were offered, the session was given over to the consideration of fuel problems.

(Continued on Page 317.)

THE ANNUAL MEETING OF THE NEW ENGLAND ASSOCIATION OF PLUMBING INSPECTORS.

Inspectors of plumbing from all parts of New England participated in the annual meeting of the New England Association of Plumbing Inspectors, held at the City Club, Boston, on Thursday afternoon, January 29th. Forty members were present marking a new high record of attendance. All were well repaid for their trip, for in addition to an excellent dinner provided by the Ways and Means Committee under the direction of Chairman Andrew J. Burnett, the discussions of the afternoon were of more than usual interest and a most pleasing address was given by Mayor Charles H. Adams, of Melrose.

Officers for 1920 were elected at the meeting as follows: President, Ernest G. Bates, of Springfield; vice-presidents: Charles White, of Boston; John J. Connors, of Manchester, N. H.; J. R. Walker, of Waterbury, Conn.; Reuben S. Bemis, of Providence, R. I.; secretary, Oswald J. Cullington,



Andrew J. Burnett.

Reuben S. Bemis.

of Lawrence; treasurer, J. H. Mullowney, of Boston; chairman of scientific committee, F. W. Tower, of Springfield; chairman of legislative committee, Thomas M. Wilson, of Boston; chairman of ways and means committee, Andrew J. Burnett, of Melrose.

Mayor Adams, who is at present a member of the State Commission of Necessaries of Life and who was for a number of years a member of the state board of charity, gave an interesting talk on the need for sanitary regulations and discussed improvements made in plumbing in recent years from the standpoint of one outside the business. After his talk the members spent some time in a general discussion of range boilers and valves, and the matter of uniform plumbing regulations for all municipalities in the state. This is a matter for which the association has long been working and which the members hope to see an accomplished fact before many years. The matter was brought before the meeting through the report of the legislative committee. Several new members were voted into the association.

A number of the members took advantage of their presence in the "big city" to stay over and take in a show before returning to their distant homes, the meeting being held in the afternoon to permit of such diversion in the evening.

Maryland Master Plumbers' Annual Reception.

The Maryland Master Plumbers' Association will hold its annual reception and dance on Monday evening, April 5th, at Lehman's Hall, Baltimore, Md. Nelson Barnes, of that city, is chairman of the entertainment committee, which has already started elaborate preparations for an enjoyable evening.

February 10, 11 and 12, 1920.—The twenty-ninth annual convention of the Ohio State Association of Master Plumbers, at Cleveland, O., with headquarters at the Winton Hotel.

February 11, 1920.—The winter meeting of the Eastern Supply Association, at New York City, with headquarters at the Hotel Astor.

February 12, 1920.—The regular meeting of the Board of Directors of the National Trade Extension Bureau, at the Hotel Astor in New York City.

February 18, 1920.—The winter meeting of the Central Supply Association, at Chicago, with headquarters at the Congress Hotel.

February 26th, 27th and 28th, 1920.—The twenty-third annual convention of the Montana Master Plumbers' Association, at Anaconda, with headquarters at the Montana Hotel.

March 2 and 3, 1920.—The second annual convention of the North Dakota Master Plumbers' Association, at Grand Forks, N. D.

March 8, 9 and 10, 1920.—The annual convention of the Indiana Society of Sanitary Engineers, at Richmond, Ind.

March 15 and 16, 1920.—The annual convention of the Kansas Master Plumbers' Association, at Wichita, Kansas.

March 15 and 16, 1920—The annual convention of the Missouri State Association of Master Plumbers, at St. Joseph, Mo.

March 17, 18 and 19, 1920.—The annual convention of the Nebraska Master Plumbers' Association, at Lincoln, Nebr., with headquarters at the Lincoln Hotel.

March 18 and 19, 1920.—Quarterly meeting of The National Association of Brass Manufacturers, in Chicago.

April 5 and 6, 1920.—The annual convention of the Massachusetts Association of Master Plumbers, at Boston.

April 7 and 8, 1920.—The annual convention of the Maine State Association of Master Plumbers, at Bangor, Me., with headquarters at the Bangor House.

April 13, 1920.—The annual convention of the Oklahoma Master Plumbers' Association, at Muskogee, Okla.

May 10 and 11, 1920.—The eleventh annual convention of the National Pipe and Supplies Association, in Chicago, with headquarters at the Congress Hotel and Annex.

May 10, 11 and 12, 1920.—The annual convention of the Kentucky Master Plumbers' Association, at Louisville, Ky.

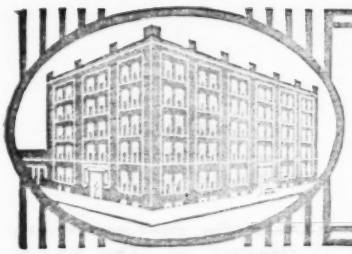
May 12, 13, 14 and 15, 1920.—The seventh National Foreign Trade Convention, at San Francisco, Cal.

May 18 and 19, 1920.—The annual convention of the Pennsylvania State Association of Master Plumbers, at Harrisburg, Pa., with headquarters at the Penn-Harris Hotel.

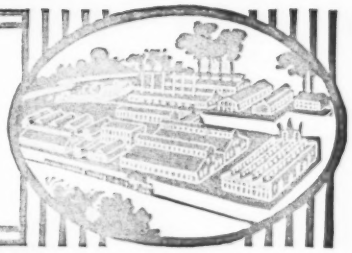
May 24, 25 and 26, 1920.—The annual convention of the California State Association of Master Plumbers, at Oakland, Calif.

June 15, 16 and 17, 1920.—The thirty-eighth annual convention of the National Association of Master Plumbers, in Pittsburgh, Pa., with headquarters at the William Penn Hotel.

September 7, 8 and 9, 1920.—The annual meeting of the American Society of Sanitary Engineering, at St. Louis, Mo.



Among the Wholesalers and Manufacturers



COMPANIES RECENTLY INCORPORATED.

The Neuburger-Hillman Corporation has been incorporated with a capital of $30,000 to deal in plumbing, engineering and machinery supplies. The incorporator is L. Neuburger, 1792 Washington Avenue, Bronx, New York.

The Yokel Corporation, of Hartford, Conn., has been incorporated with a capital of $50,000, to manufacture heating goods. The incorporators are: W. G. Yokel, A. T. LeRoy and H. B. Fellman, all of Hartford.

DIRECTORS OF TRADE EXTENSION BUREAU TO MEET IN NEW YORK CITY.

The board of directors of the National Trade Extension Bureau will hold its regular meeting at the Hotel Astor in New York City, on Thursday, February 12th, according to official call authorized by Frank B. Lasette, president of the National Association of Master Plumbers, and issued by Wm. J. Woolley, manager of the National Trade Extension Bureau.

ENLARGING OFFICES AND SHOWROOMS.

August Buschmann & Sons, Inc., of Indianapolis, Ind., are building an addition to their offices and showrooms at College Avenue and Eleventh Street in that city.

GEO. KEISER & CO. BUY ANOTHER BUILDING.

Geo. Keiser & Co., of Muncie, Ind., who recently bought the property in which they have been located since they started in business in 1886, have just bought another building, thus obtaining a total floor space of 46,000 sq. ft.

INCREASES CAPITAL STOCK TO HALF A MILLION.

The McDonald Under-Seat Valve Co., Sweatland Building, Cleveland, O., has increased its capital stock to $500,000. The officers of the company are: S. F. McDonald, president, and John L. Dowling, secretary and treasurer.

NEW SUPPLY HOUSE IN HOLYOKE, MASS.

The Collins Plumbing Supply Co., is the name of a new concern which will soon start in business in Holyoke, Mass. T. J. Collins, for the past fourteen years in charge of the Northampton branch of the F. W. Webb Mfg. Co., of Boston, is at the head of the new company, which will be incorporated under the laws of Massachusetts.

NOW IN NEW LOCATION.

The Rogers Ebert Co., of Orange, N. J., has just moved into its new office and warehouse at 7-11 Alden Place in that city, where the company has secured larger quarters and better shipping facilities.

STANDARD SANITARY MFG. CO. DECLARES DIVIDENDS.

The Standard Sanitary Mfg. Co., of Pittsburgh, Pa., has declared its regular quarterly dividends of 1¾ per cent on the preferred stock, and 2 per cent on the common stock with an extra dividend of 2 per cent on the common stock. Checks will be mailed February 10th to stockholders of record February 5th.

THE UNION RADIATOR CO. MOVES ITS CHICAGO WAREHOUSE.

The Union Radiator Co., of Johnstown, Pa., has moved its warehouse in Chicago from 341 North Clark Street, to the corner of Cherry Avenue and Bliss Street, where it has secured more spacious quarters. Its Chicago office, however, will remain at 1507 Lytton Building. Both the Chicago branch office and warehouse are in charge of Charles O. Lindahl.

WILLIAMS TOOL CORPORATION SUCCEEDS WILLIAMS TOOL CO.

The Williams Tool Corporation, which has just been organized and incorporated under the laws of the state of Delaware, has acquired the business, plant and manufacturing assets of the Williams Tool Co., of Erie, Pa. The new company is capitalized at $300,000, 8 per cent cumulative, convertible, preferred stock, and 20,000 shares of common stock. The officers of the new corporation are: President, George M. Brill, New York City; secretary and treasurer, P. H. Cunningham, Erie, Pa.; engineer and superintendent, C. F. Williams, Erie, Pa. Mr. Williams is the son of the founder of the business and will remain with the new concern.

THE SALES CONVENTION OF THE RUUD MFG. CO.

A total mileage of 75,000 miles, enough to encircle the earth three times, was represented at the 1920 sales convention of the Ruud Mfg. Co., of Pittsburgh, Pa., held at the William Penn Hotel in that city, from January 26th to 30th, inclusive. Every important city in the United States had a delegation at the convention, the farthest points being represented by Otto Neisser, of Los Angeles, Cal.; H. R. Basford, of San Francisco, Cal.; J. C. Dyer, of Jacksonville, Fla., and W. T. Pease, of Boston, Mass. Every phase of the sales problem was given attention at the convention; the 1920 schedule of advertising was explained and a visit to the factory made. The relation of the export activities of the company to the general post-war, world-wide trade expansion on the part of American manufacturers was discussed. The convention was attended by 92 gentlemen, including officers, department managers, branch office managers and sales representatives. The officers of the company are: Edwin Ruud, president; S. S. Robertson,

vice-president; A. P. Brill, secretary-treasurer and general manager.

CHANGES IN THE PERSONNEL OF THE VAPOR HEATING CO.

The Vapor Heating Co., of York, Pa., has just announced the election of Charles E. Scott to the office of vice-president of the company. Mr. Scott will continue actively as manager of the company's New York office, at 597 Fifth Avenue. The company also announces the appointment of C. H. Strayer to the position of sales manager, which work will be conducted from the company's home office in York. Additions have also been made to the company's engineering department through the appointment of Paul E. Somers and Henry Somers.

SAMUEL O. DUGGER CALLED BY DEATH.

Sam. O. Dugger, of the California Hydraulic Engineering & Supply Co., of San Francisco, Cal., died Sunday, February 1st, at his home in that city. After a business trip in the East, Mr. Dugger started home from Chicago on Thursday, January 22nd, arriving in San Francisco on Sunday, January 25th. On Tuesday, January 27th, he was unable to be at his office on account of a severe cold, which rapidly developed into pneumonia from which he died five days later. On his recent visit in Chicago, he was in excellent health and fine spirits, and many of his old friends here will treasure the memory of his last visit to Chicago, where he had resided for so many years and was so well known in the heating and plumbing trade. His remains were brought to Chicago and interment took place at Rosehill Cemetery on Friday, February 6th. Mr. Dugger first came to Chicago in 1894 and was connected with the Standard Radiator Co., of Buffalo, N. Y., as manager of its Chicago office until that company went out of business. He then became associated with the sales department of the Western Tube Co.'s Kewanee office. Later he organized the firm of Murphy-Dugger-Clark Co., jobbers of plumbing and heating supplies in Chicago, and was also for a time connected with the sales department of the Crane Co., Chicago. "Sammie" Dugger was well known to the plumbing and heating trade of the West and Middle West, having a great faculty for making friends and keeping them. He was an only brother of J. P. Dugger, secretary of the Kewanee Boiler Co., of Kewanee and Chicago.

CONGRESS TO CONSIDER THE STEPHENS BILL.

It was learned this week that the so-called Stephens Bill, which it is claimed will prevent the misuse of well-known trade-marked articles as advertising bait to deceive the public, would be actively pushed by its friends as soon as Congress shall finally dispose of the railroad and water power legislation now in their last stages.

For several years representatives of wholesale and retail organizations throughout the country, as well as manufacturers, have been coming to Washington and urging the passage of the Stephens Bill. It is said that more than 800 national and state associations of merchants are solidly behind the measure and that only the intervention of the war prevented its consideration two years ago.

The Federal Trade Commission, after exhaustive hearings and prolonged investigation has sent two special reports to Congress recommending legislation and formally approving the Stephens Bill. This has greatly encouraged its friends in and out of Congress in confidence of early action.

The decision to resume active work for the enactment of the bill was reached after a series of conferences this week and the American Fair Trade League, which has been directing the movement, has just issued a statement through its Executive Committee, composed of prominent business men and economists, setting forth the need for legislative relief and calling for active work

NEW CONSTRUCTION WORK.

The following are among the most important contracts recently awarded as reported in "The American Contractor":

$20,000,000. Manufacturing plant, Buffalo, N. Y. Dunlap Rubber Co.

$3,000,000. Theater, Store and Office Building, Grand Rapids, Mich. Regent Theater Co.

$2,000,000. Office Buildings, Garage and Service Building, Cleveland, O. Euclid Windsor Co.

$1,500,000. Mill Buildings, Danville, Va. Riverside and Danville River Cotton Mills, Inc.

$1,300,000. School, Canton, O. Board of Education.

$1,000,000. Factory, Cincinnati, O. Baldwin Piano Co.

$1,000,000. Club, Washington, D. C. The Commercial Club.

$750,000. Plant, St. Louis, Mo. Monsante Chemical Co.

$750,000. Theater, Columbus, O. The Wm. M. James Co.

$700,000. Manufacturing Building, Passaic, N. J. Passaic Cotton Mills.

$450,000. Bank and Office Building, Oklahoma City, Okla. Tradesmen's State Bank.

$450,000. Foundry, Newton, Mas. Saco Lowell Works.

$400,000. Hotel, LaFayette, Ind. Geo. D. Roberts.

$400,000. Plant, Winchester, Pa. Winchester Cold Storage Co.

$400,000. Theater and Office Building, Minneapolis, Minn. Industrial Investment Co.

$350,000. Dry Kiln, Lumber Storage Building, Muskegon, Mich. Superior Seating Co.

$300,000. Factory, Cleveland, O. The Mid-West Box Co.

$220,000. Telephone Exchange, New York City. New York Telephone Co.

$200,000. Dormitory, Akron, O. Goodyear Tire & Rubber Co.

$200,000. School, Cleveland, O. Board of Education.

$160,000. Office and Restaurant, New York City. U. S. Food Products Co.

$150,000. Garage and Service Station, Dayton, O. The Leyman Buick Co.

$150,000. Residence, New York City. Mrs. I. Townsend Burden.

$150,000. Plant, Akron, O. F. W. Albrecht.

$150,000. Court House and Jail, Duncan, Okla. Stephens County.

$150,000. Store, St. Paul, Minn. Lyon Hardware Co.

NATIONAL FOREIGN TRADE CONVENTION.

Thirty Foreign Nations to Send Trade Advisors to San Francisco Convention of National Foreign Trade Council.

James A. Farrell, chairman of the National Foreign Trade Council, an organization composed of 75 of the leading American merchants and manufacturers engaged in foreign trade, announces that thirty foreign nations representing Central and South America, Canada, Australasia and the Far East, will have trade advisors at the Seventh National Foreign Trade Convention to be held at San Francisco, May

12th-15th, 1920, for the purpose of supplying first hand information in regard to the markets of their respective countries.

The countries from which trade advisors are expected are as follows:

Canada.

Central America:—Mexico, Panama, Salvador, Honduras, Costa Rica, Guatemala, Nicaragua.

South America:—Colombia, Venezuela, Ecuador, Peru, Bolivia, Brazil, Paraguay, Uraguay, Argentina, Chile.

Australasia:—Australia, New Zealand, Tasmania, Straights Settlement.

Far East:—Dutch East Indies, Indo-China, India, Philippines, Siberia, Siam.

The departure of the Council this year in extending an invitation to foreign countries to be represented by special trade advisors is expected to result in a notable attendance of foreign traders from all over the world. Reports already received from Chambers of Commerce abroad indicate that many foreign merchants will take advantage of this opportunity to meet in personal consultation with leaders of American business. American firms having representatives in foreign fields have been requested to have their foreign representatives time their visits to this country in order to take advantage of the Convention.

In commenting upon the presence of the foreign trade advisors, O. K. Davis, Secretary of the National Foreign Trade Council, has announced that ten trade advisors are being allotted to each one of the foreign nations whose commercial representatives have been invited to the Convention. These special advisors will be chosen by trade organizations in their respective countries.

"These foreign trade advisors," continued Mr. Davis, "will be thoroughly representative of the international commerce of their respective countries. They will be at San Francisco for the purpose of supplying first hand information in regard to the markets of their respective countries. They will not be official Government representatives, but commercial delegates in the true sense of the word.

"The Seventh National Foreign Trade Convention will be a gathering of representatives of all phases of the international commerce of the United States. Delegates will attend from all parts of the country, and the opportunity of acquiring foreign trade information will, this year, be an exceptional one, through the presence of trade advisors from the various foreign nations."

SCOTTISH-AMERICAN ASSOCIATION IN EDINBURGH.

To Found a Chair of American History.

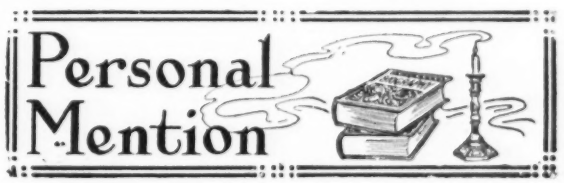
According to the American Chamber of Commerce in London, a Scottish-American Association has been formed at Edinburgh to foster relations between Scotland and America. Inaugurated about Thanksgiving last, it has met with much favor in Scotland and has progressed rapidly.

The Association is largely the embodiment of a suggestion made by Dr. Walter Hines Page, formerly American Ambassador to Great Britain, when he received the Freedom of the City of Edinburgh. Dr. Page's successor, the Hon. John W. Davis, present Ambassador to Great Britain, was present and delivered an address at its opening.

The Association plans to start a Scottish-American Luncheon Club which will entertain periodically prominent Americans. It also contemplates founding two lectureships of American economics.

Professor Charles Sarolea, of the University of Edinburgh, has been lecturing two or three times a week on America all over Scotland.

The American Chamber of Commerce in London watches with interest the growth of this movement which it hopes will increase cordiality and co-operation between Scotland and America, as the Chamber has been able to do in its work of developing trade and friendship between the United States and the United Kingdom in general.



W. G. Callow, for many years president and treasurer of the Kennedy Co., Cleveland, O., has sold his interest in this company and has just started on a four months' tour of the Orient, on which he plans to visit Japan, China and India.

A. P. Broomell, president of the Vapor Heating Co., of York, Pa., entertained a large number of his friends with a dinner at the Lafayette Club in that city, on Wednesday, January 21st. Among his guests were thirty prominent heating contractors as well as officers and branch managers of his company. Mr. Broomell in the course of the evening delivered an interesting address on the "Value of Co-Operation in the Heating Business," and emphasized the importance of clean competition among heating contractors.

Frank M. Wilcox.

Frank M. Wilcox, whose likeness is shown herewith, has just been appointed southern division manager for the Josam Mfg. Co., of Michigan City, Ind. Mr. Wilcox, who was formerly connected with the American Ship Building Co., of Beaumont, Texas, will cover Texas, Louisiana, Alabama, Georgia and Florida for the Josam company.

E. C. Whalen has been appointed California representative for the closet seat department of the Brunswick-Balke-Collender Co., of Chicago. Mr. Whalen will make his headquarters at 325 Monadnock Building, San Francisco.

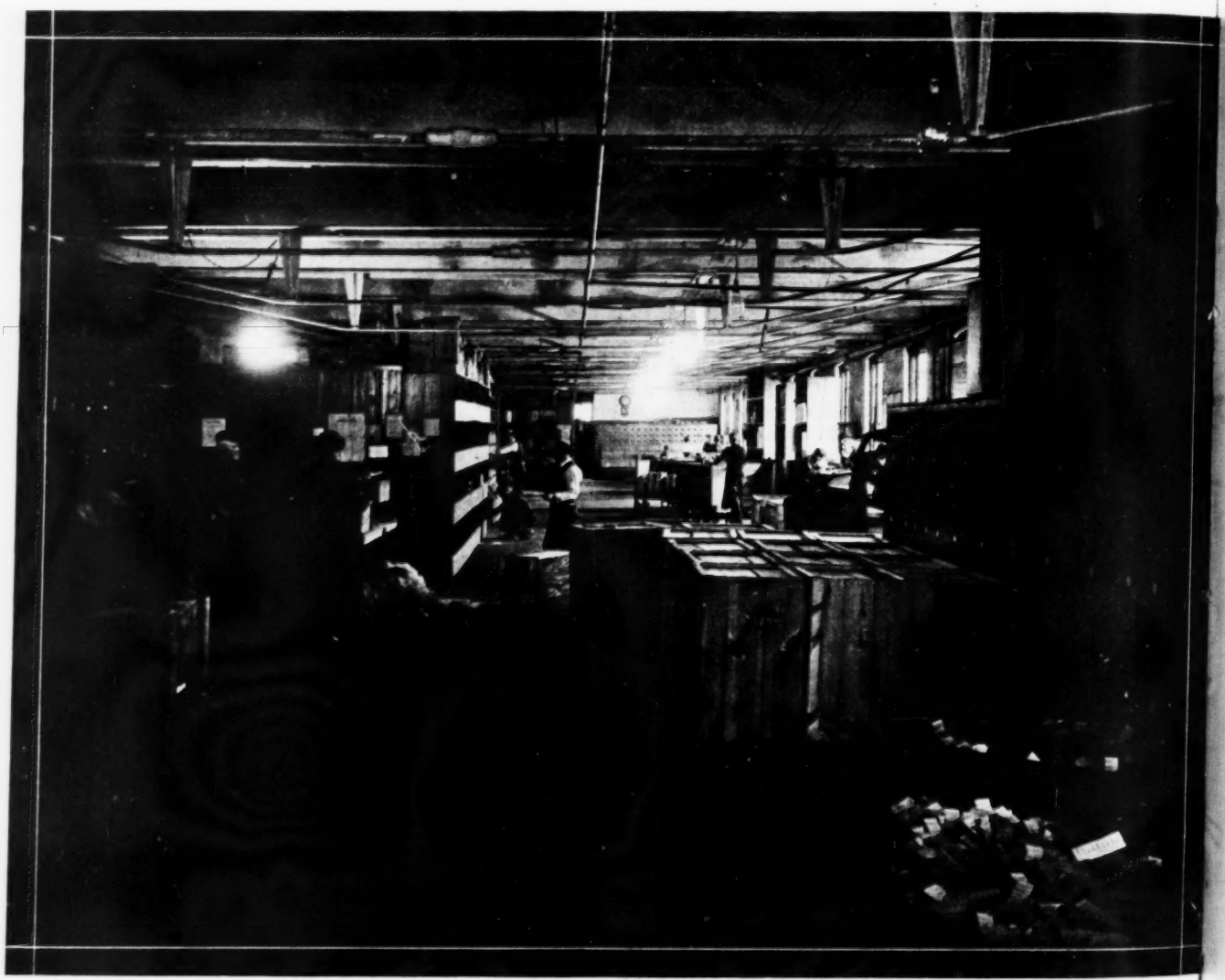
S. G. Wetzler, president and sales director of the Blue Seal Chemical Co., of Roselle, N. J., has just spent a few days in Chicago and other cities in the Central West in the interest of his business.

A. S. Winter, formerly advertising and sales manager of the Wm. Powell Co., of Cincinnati, O., has joined the sales force of the Fairbanks Co., of Pittsburgh, Pa. He will represent the latter company in southern Ohio.

TRADE LITERATURE.

A Message to Boiler Operators.

The Kewanee Boiler Co., Kewanee, Ill., has just compiled an interesting 24-page booklet which is entitled, "A Message for the Operators of Kewanee Boilers." Starting on page 5 are 27 directions for the care and operation of such boilers, then there are suggestions for firing, what not to do, banking fires on downdraft furnaces, and taking care of the boiler in summer. The instructions are accompanied by drawings which are clear and readily understood by the reader.



J. B. WISE, Inc.

Manufacturers of Plumbers'

Your Order

Here is where your order for "Wiseco" Products reaches its final stage of completion —the shipping department.

Thousands of packing cases filled with "Wiseco" Products and consigned to every corner of the earth, leave this department daily.

One acquainted with the details of the shipping department of a large manufactory will easily appreciate the unusual care and diligence necessary to the completion of orders.

Many of the men in this department responsible for the safe receipt of your "Wiseco" Products have grown up with the "Wiseco" Organization. They could tell you interesting tales of the development of J. B. Wise, Inc., in which they, themselves, have played such important parts.

It is in this department that we end our travels through the "Wiseco" Plants. You have watched with interest the development or fabrication of the highest-grade Plumbers Sanitary Brass Goods from raw materials to finished product.

You have gained some knowledge of the magnitude of the organization back of these goods and now you feel certain and safe in specifying or using any brass goods that bear the stamp of "Wiseco."

Whenever you see an owl remember that it symbolizes "Wiseco" Quality and Service and satisfaction of the highest order.

"WISECO" Products

C., Watertown, N.Y.

nber' Sanitary Brass Goods

THE METAL MARKET AND TRADE REPORTS

Steel and Iron.

Production of pig iron and steel is at about the same rate as that of two weeks ago, no further gain in the rate having occurred on account of transportation conditions. January as a whole, however, will show materially heavier production than December, and possibly the heaviest production of the year. Transportation is gradually improving and with the advance towards spring, conditions are bound to become more nearly normal.

Labor conditions are reported at the mills to be improving. The 10-per-cent wage advance announced last week by the United States Steel Corporation will no doubt be followed by the independents. While the independents have been advancing steel prices, the Steel Corporation takes the initiative in advancing wages. The latter has not departed from the March 21st or Industrial Board Schedule of prices. The most exciting feature of the steel market during the past week was the commandeering by the United States Railroad Administration of 72,500 tons of open-hearth rails for delivery before March 1st. The orders are distributed among five mills at a minimum of $47, with exceptions for certain producers to be determined later. Besides this, 45,000 tons have also been ordered. The requirements of the administration are estimated in all at 280,000 tons, so that the mills will likely be called on for 165,000 tons additional. If the Government presses its demand, the present mill schedules for the production and distribution of raw steel will be considerably upset, and the shortage of steel for general commercial use will be, for a time at least, more pronounced than ever. The mills are not only heavily oversold, but are carrying a large accumulation of finished material, which in many instances has crowded their limited storage capacity to a point which may force some of them to curtail further production until the railroads are able to give the much-needed relief. Demand for sheets has recently slowed down, not because they are not wanted, but because consumers have found it impossible to cover their requirements. They are bidding all sorts of prices for deliveries the next two or three months.

Pig iron has resumed the sharply advancing tendency so noteworthy from the first of October until just before the holidays. Basic and foundry are up $40, valley, Bessemer being $41 and further advances are expected. Buying is for delivery in the second half, the first half being well sold up, and the furnaces, that are selling, state that they are merely accumulating a "back log" tonnage, so that further advances may occur shortly. Pig iron is likely to advance until the buying power of consumers is exhausted. It is estimated that the tonnage sold during January exceeds by quite a large margin the present rate of production. The furnaces rely upon increased operations by early spring, when conditions in respect to the supply of coke supply and transportation facilities are expected to improve materially. Prices are quoted as follows:

No. 2X, Philadelphia	$44.35
No. 2 Southern, Cincinnati	43.00
No. 2 Furnace, Chicago	40.00
Basic Valley, Furnace	40.00
Bessemer, Pittsburgh	42.40

Copper.

While the copper market as a whole was quiet during last week, there were signs of some activity towards the close, and a fair amount of business, including one round lot of 1,000,000 pounds, for the first quarter was booked. Speculation is less in evidence and the tone of the market is steadier. There is ample copper to meet domestic requirements, and the larger consumers are provided for some little time. But stocks have been considerably reduced by heavy commitments in December and early January, and dealers are now holding copper close to or fractionally under the prices of producers to consumers, but there is not much actual metal available from second hands. Producers are still holding steadily to their quotations of 19¼ cents for the first quarter and 19¼ to 19½ cents for second, at which prices business has been done during the past few days.

Tin.

Tin is easier and lower, both in London and New York. The market has been steadily declining in New York, without reference to London, as holders are rather weak and were anxious to realize profits on a considerable supply. At the end of the week there were sales at 60½ cents for spot and 61½ cents for futures. The price, compared with the corresponding day a week ago, represented a decline of 3 cents a pound for spot and 2¼ cents for futures. Demand toward the end of the week was fairly active in consumers' as well as dealers' account, and tin plate manufacturers were buying on a fairly liberal scale.

Lead.

While lead has not been particularly active, it has lost some of its strength, as the underlying conditions are strong. The comparative lightness of demand may be attributed to the fact that there is very little offering. Whatever comes on the market is taken as it appears at current quotations. The movement of lead from the West has been hampered by transportation conditions, and production is light when measured by requirements. The consumers, however, have shown no inclination to contract for distant delivery. The outside market is quoted at 8¾ cents for nearby New York delivery, and 8½ cents East St. Louis. The principal producers continue to hold their price of 8½ cents New York and 8¼ cents East St. Louis.

Spelter.

The stoppage of all export business owing to the heavy drop in foreign exchange has had a depressing effect on zinc and domestic demand has been only moderate at best. Prices have been tending downward and there was not much offering for prompt delivery; however, at the end of the week sellers asked 9.10 cents East St. Louis, as against 9.05 cents for February and March, and 9 cents for April-June delivery.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum (in 50-ton lots)	33 cents per lb.
Powdered Aluminum	60 to 61 cents per lb.

Solder, No. 1 ..... 32 cents per lb.
Antimony, Chinese, W. C. C. Co ..... 11 cents per lb.

New York Old Metal Market.

The following prices are current for old metals:

	Buying.	Selling
Copper, heavy	17 to 17½ cents	18½ cents
Copper, light	15¾ cents	16¾ cents
Brass, heavy	10¾ to 11 cents	12 cents
Brass, light	8½ to 9 cents	10 cents
Brass turnings	10 to 10½ cents	11½ cents
Lead, heavy	7¼ to 7½ cents	8½ cents
Tea lead	5 to 5½ cents	6 cents
Scrap zinc	5¼ to 5½ cents	6½ cents
Solder joints	13 to 13½ cents	14½ cents
Mixed babbit	8 to 9 cents	10 cents
Composition turnings	13¼ to 14 cents	15 cents
New brass clippings	11¾ cents	12¾ cents
Tin foil	48 cents	50 cents
Cast aluminum	25½ to 26 cents	27 cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

Heavy yellow brass	9½ to 10 cents	10½ cents
Brass, light	10 to 10½ cents	11 cents
Brass borings	10½ to 11 cents	12 cents
Brass turnings	10 to 10½ cents	11 cents
Red brass	16½ to 17 cents	18 cents
Copper, crucible	17 to 17½ cents	18½ cents
Copper, heavy	16¾ to 17 cents	18 cents
Copper, light	15 to 15½ cents	16½ cents
Lead, heavy	7 to 7¼ cents	7¾ cents
Tea lead	4¼ to 4½ cents	5 cents
Zinc	6 to 6½ cents	7 cents
Solder joints	9 to 10 cents	11 cents

The Pipe Market.

Quotations on less than car lots of full weight steel pipe are as follows:

	Butt Weld Blk.	Butt Weld Galv.	Lap Weld Blk.	Lap Weld Galv.
⅛ to ⅜ inch	42	14	.....	.....
½ inch	46	30	.....	.....
¾ to 3 inch	49	34	.....	.....
2 inch	.....	.....	42	28
2½ to 6 inch	.....	.....	45	31
7 to 12 inch	.....	.....	40	25

The quotations apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong steel pipe in less than car lots, quotations are as follows:

	Extra Strong Plain Ends Butt Weld Blk.	Extra Strong Plain Ends Butt Weld Galv.	Extra Strong Plain Ends Lap Weld Blk.	Extra Strong Plain Ends Lap Weld Galv.	Double Extra Strong Plain Ends Butt Weld Blk.	Double Extra Strong Plain Ends Butt Weld Galv.	Double Extra Strong Plain Ends Lap Weld Blk.	Double Extra Strong Plain Ends Lap Weld Galv.
⅛, ¼ and ⅜ inch	36½	11½	.....	.....	.....	.....	.....	.....
½ inch	41½	16½	.....	.....	29½	.....	.....	.....
¾ to 1½ inch	45½	20½	.....	.....	32½	.....	.....	.....
2 to 2½ inch	46½	21½	.....	.....	34½	.....	.....	.....
3 inch	46½	21½	.....	.....	.....	.....	.....	.....
2 inch	.....	.....	38½	13½	.....	.....	27½	.....
2½ to 4 inch	.....	.....	41½	16½	.....	.....	29½	.....
4½ to 6 inch	.....	.....	40½	15½	.....	.....	28½	.....
7 to 8 inch	.....	.....	34½	9½	.....	.....	21½	.....
9 to 12 inch	.....	.....	29½	.....	.....	.....	.....	.....

With threads only, the basing discount is 1½ points lower. With threads and couplings the basing discount is 3 points lower. The quotations apply to less than car lots.

Quotations on full weight genuine iron pipe, in less than car lots, are as follows:

	Butt Weld Blk.	Butt Weld Galv.	Lap Weld Blk.	Lap Weld Galv.
¼ inch	+8	+36	.....	.....
⅜ inch	17½	+11½	.....	.....
½ inch	21½	1½	.....	.....
¾ to 1½ inch	26½	8½	.....	.....
2 inch	.....	.....	20½	4½
2½ to 6 inch	.....	.....	22½	7½
7 to 12 inch	.....	.....	17½	2½

These quotations are f. o. b. Pittsburgh, and apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong genuine wrought iron pipe, with plain ends, and in less than car lots, the quotations are as follows:

	Extra Strong Butt Weld Blk.	Extra Strong Butt Weld Galv.	Extra Strong Lap Weld Blk.	Extra Strong Lap Weld Galv.	Double Extra Strong Butt Weld Blk.	Double Extra Strong Butt Weld Galv.	Double Extra Strong Lap Weld Blk.	Double Extra Strong Lap Weld Galv.
⅛ to ⅜ inch	15½	+12½	.....	.....	.....	.....	.....	.....
½ inch	20½	+ 7½	.....	.....	.....	.....	.....	.....
¾ and 1 inch	26½	+ 1½	.....	.....	.....	.....	.....	.....
1¼ inch	26½	+ 1½	.....	.....	.....	.....	.....	.....
1½ inch	26½	+ 1½	.....	.....	.....	.....	.....	.....
2 inch	.....	.....	20½	+ 4½	.....	.....	.....	.....
2½ to 4 inch	.....	.....	22½	+ 3½	.....	.....	.....	.....
4½ to 6 inch	.....	.....	22½	+ 3½	.....	.....	.....	.....
7 to 8 inch	.....	.....	12½	+13½	.....	.....	.....	.....
9 to 12 inch	.....	.....	6½	+18½	.....	.....	.....	.....

These retail prices are f. o. b. Pittsburgh, and apply to all quantities except in car lots. With threads only, the basing discount is 1½ points lower. With threads and couplings, the basing discount is 3 points lower.

To ascertain the price in your city, deduct the proper less-than-carload freight rate from Pittsburgh to that city. Example: Base price on ¾ to 3-inch black steel pipe is 49 per cent Pittsburgh. The less-than-carload rate to Patson is 17 cents per hundred. The price, therefore, freight allowed to Patson is:

49
1.7

47.3 per cent.

All other sizes to be figured on a comparative basis.

The Pipe Market in New England and in Parts of New York State.

In New York State on all points on the Hudson River, and in all of New York State south and east of Albany, in all New England and for export, quotations are as follows:

Wrought Steel Pipe.

	Black	Galv.
⅛ to ⅜ inch	38	4
½ inch	43	26
¾ to 3 inch	47	31
2 inch lap	38	23
2½ to 6 inch	42	27
7 to 12 inch	33	16

Extra Heavy.

	Black	Galv.
⅛ to ⅜ inch	31	+ 2
½ inch	37	12
¾ to 1½ inch	42	18
2 to 3 inch	43	19
2 inch lap	34	10
2½ to 4 inch	37	14
4½ to 6 inch	31	12
7 and 8 inch	26	4
9 to 12 inch	18	+ 3

Double Extra Heavy.

	Black	Galv.
½ inch	16	—
¾ to 1½ inch	21	—
2 to 2½ inch	23	—
2 inch lap	14	—
2½ to 4 inch	16	—
4½ to 6 inch	15	—
7 to 8 inch	2	—
14 to 20 inch O. D.	20	—

Genuine Wrought Iron Pipe.

	Black	Galv.
⅛ to ¼ inch	12	+25
⅜ inch	13	+24
½ inch	18	+ 4
¾ to 1½ inch	25	5
1¼ inch lap	net	+19
1½ inch	12	+ 6
2 inch	16	+ 2
2½ to 6 inch	18	1
7 to 12 inch	6	+12

Extra Heavy.

	Black	Galv.
⅛ to ⅜ inch	3	+30
½ inch	13	+17
¾ to 1½ inch	21	+11
1¾ inch lap	net	+34
1½ inch	10	+21
2 inch	13	+17
2½ to 4 inch	15	+13
4½ to 6 inch	6	+14
7 to 8 inch	+ 5	+26
9 to 12 inch	+12	+33

For pipe handled through shop or cut to length, add 10 per cent to the net price of pipe.

Cutting and threading 12 inch and smaller—net list prices.

Cutting and threading 14 inch and larger—25 per cent discount from list prices.

Cutting only, two-thirds of the threading price.

These prices include cartage to point of destination, if same is within cartage limits—for domestic purposes. If outside the cartage limits, they are f. o. b. shipping point, with actual freight allowed to destination, not exceeding 20c per 100 lbs. When shipped for export, the price includes cartage to point of shipment, if same is within reasonable cartage limits—with no freight allowance.

LABOR UNREST AND BUSINESS OUTLOOK.

Discussing the underlying causes of the present confused business outlook, the Mechanics & Metals National Bank will say in its February letter: "There are certain economic principles by which men and nations live and prosper, and never before, at least in living memory, was there such a need to bring back a full recognition of these principles. The fabric of trade and industry was so far torn by the war that nearly all the world is now in want, except ourselves. The part the United States is called upon to play in post-war reconstruction is more clear today than ever before, yet owing to our failure to adhere closely to those economic principles by which men and nations prosper, there are certain present checks upon our ability to play that part. These are: Diminished production, decreased thrift, strained credit.

"Production in the United States, as well as elsewhere, is below what is necessary to supply the needs and comforts and promote the prosperity of civilized people. In Europe the devastation and prostration due to the war was partly responsible. Here the reduced hours of labor that have followed the long series of strikes, combined with a notably lessened effort to work, are responsible. With the needs of reconstruction so real and pressing, the proposition has become inescapable that the attitude so generally prevailing toward work and production must undergo a sharp change in the present year unless disorganization is to loom ahead.

"Apparently prosperous, because of the delusion of high wages and high prices, the business of the United States is being conducted in a fashion that cannot possibly continue for any considerable length of time. Lasting prosperity consists not of producing less than is consumed, as we are now doing; it consists of producing more than is consumed. It may be that the remedy for our present condition is not so far away, for there are signs that the root of the evil of curtailed output and neglected effort are not so deep as had been feared, and that the evil is in the way of being corrected. American labor, upon which with American capital, our future industrial expansion and progress must depend, is manifesting that it is not the heart of the average workman that is responsible for all that we see and have been seeing since the armistice, but that it is the collective mind of labor, temporarily turned by the 'ecstacy of great profits' that came out of the war, that has been distorted by all that has gone on since. And although the clearing away of the many present misunderstandings may require time, we can look forward to settling our troubles in due course, in a way that will give American employers law and order and American workers justice and enlarged opportunity."

LARGE CONSTRUCTION CONTRACTS RECENTLY AWARDED.

$2,000,000 manufacturing buildings, Buffalo, N. Y.; Philadelphia Rubber Works Co.

$2,000,000 factory, Charleston, W. Va.; Libbey Owens Sheet Glass Co.

$1,000,000 stores and family apartment hotel, Cleveland, O.; the Circle Hotel Apartments Co.

$1,000,000 loft buildings, St. Louis, Mo.; Rice Stix Dry Goods Co.

$1,000,000 factory, Detroit, Mich.; Dort Motor Car Co.

$100,000 factory, Chicago; Republic Flow Meters Co.

$100,000 laundry buildings, Trenton, N. J.; Blabely Laundry Co.

$1,000,000 printery and bindery, Long Island City, L. I., N. Y.; Metropolitan Life Insurance Co.

$800,000 club house, Washington, D. C.; the Racquet Club of Washington.

$600,000 temple, Cleveland, O.; Masonic Building Co.

$550,000 building, Philadelphia, Pa.; Bigelow Wiley Co.

$535,000 factory, Jersey City, N. J.; C. F. Mueller.

$500,000 office building, Washington, D. C.; Evening Star.

$500,000 hotel and ball room and stores, Detroit, Mich.; Chinese Merchants' Association.

$500,000 bank and office building, Oklahoma City, Okla.; Tradesmen's State Bank.

$500,000 church, Holyoke, Mass.; Second Congregational Church Society.

$300,000 factory building, Des Moines, Iowa.; Hawkeye Tire & Rubber Co.

$300,000 storage warehouse, Philadelphia, Pa.; Miller North Broad Storage Co.

$260,000 school building, Minneapolis, Minn.; Board of Education.

$250,000 station, Boston, Mass.; United States Government.

$250,000 office building, Cleveland, O.; Plain Dealer Publishing Co.

$225,000 apartment building, Chicago; Mrs. Arnold A. McLennan.

$225,000 theater, Rock Island, Ill.; Rosenfield Hopp Co.

$200,000 building, Fairchance, Pa.; Dupont Powder Co.

$200,000 factory, Cleveland, O.; Guide Motor Lamp Co.

$200,000 factory and warehouse, Richmond, Va.; Simmons Co.

$200,000 theater building, Detroit; Riveria Theater Co.

$200,000 creamery, Peoria, Ill.; Peoria Creamery Co.

$200,000 vaudeville and motion picture theater, New Bedford, Mass.; Empire Theater Co.

$200,000 mill, Paterson, N. J.; Diamond Silk Co.

$200,000 factory and office building, Chicago; Tuthill Spring Co

$125,000. Mill, Central Falls, R. I. Fortuna Silk Mills.

$100,000. Amusement Park, Baltimore, Md. John J. Carlin.

$100,000. School, Mechanicsville, N. Y. Board of Education.

$100,000. Factory, Dipped Goods Bldg. and Power House, Cincinnati, O. The Virginia Rubber Co.

$100,000. Foundry, Cranston, R. I., Universal Winding Co.

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Chicago and Vicinity.

S. J. Loula, 2110 South Crawford Avenue, will install the plumbing in the $65,000 two-story and basement bakery, to be erected at 2317-37 South Robey Street, and in a $12,000 tailor shop at 1810-1812 South Crawford Avenue.

Nilson Bros., 3222 North Halsted Street, have been awarded the contract for the installation of modern plumbing in the seven-story loft building to be erected for the A. J. Cox Co., at 521 West Monroe Street.

Chas. C. Breyer, 1545 West Division Street, has secured the contract for the installation of modern plumbing in the $25,000 manufacturing building to be erected for Jos. Weidenhoff at 4352-58 Roosevelt Road.

The Advance Heating Co., 110 North Desplaines Street, has been awarded the heating contract on the $165,000 plant to be erected for H. Kramer Co., at Twenty-first and Loomis Streets.

Geo. A. Henrich, 5650 Broadway, will install the heating, and Jos. B. Weber, 4834 Broadway, the plumbing in the $80,000 tailor shop to be erected for John R. Bowes at 2300 South Fifty-sixth Avenue, Cicero.

Architect Edward D. Shank, 38 South Dearborn Street, is preparing plans for a $100,000 apartment building to be erected on Dover and Lawrence Avenues.

Architect N. S. Spencer & Son, Old Colony Building, have prepared plans for a $500,000 school to be erected at Independence, Kans.

Plans have been prepared by Architect Orlando Van Gunton, 64 East Van Buren Street, for the erection of a $100,000 apartment building for H. Paulson and Jas. J. Fairweather, at Sheridan Road and Junior Terrace.

Architect I. S. Stern, 35 South Dearborn Street, has prepared plans for the $110,000 four-story warehouse to be erected at 2068-76 Dominick Street for the Gutmann Co.

Architects Fugard & Knapp, 64 East Van Buren Street, are preparing plans for a $225,000 apartment building to be erected for Mrs. Arnold A. McLennan, at 232 Walton Place.

Architect Roy E. Pingrey, 209 South LaSalle Street, is preparing plans for a $100,000 factory to be erected for the Lindstrom-Smith Co., at 3212-34 West Lake Street.

Architect J. E. O. Pridmore, 38 South Dearborn Street, has prepared plans for a $85,000 theatre to be erected at Clinton, Ind., for the Bankers & Merchants Theatre Co., Indianapolis.

Plans are being prepared by Architects N. S. Spencer & Son, 37 West Van Buren Street, for a six-story and basement bank and office building to be erected at Mattoon, Ill., for the State National Bank of Mattoon. This structure will cost in the neighborhood of $200,000.

Architect M. Temps, 19 South La Salle Street, has prepared plans for the $300,000, six-story apartment building to be erected at 2747 Hampton Court.

The National Conference on Concrete House Construction, which meets in Chicago, February 17th to 19th, inclusive, is being organized to study the housing problem and to formulate plans for extensive construction.

Other Cities in the State.

Work has been started on a $225,000 theatre building, the corner of Third and Nineteen Streets, Rock Island, for the Rosenfield Hopp Co. Plans were prepared by Architect Cervin & Horn, Safety Building, Rock Island.

Architects Eliel & Wolfley, Rockford, have prepared plans for a $450,000, eight-story and basement, bank and office building to be erected for the Phoenix Building Corporation, at Mulberry and North Main Streets, in that city.

W. F. McGuire, manager of the Rockford Heating & Ventilating Co., Rockford, has just been able to leave the hospital where he was confined for several weeks and expects to be able to assume his duties at an early date.

Iowa

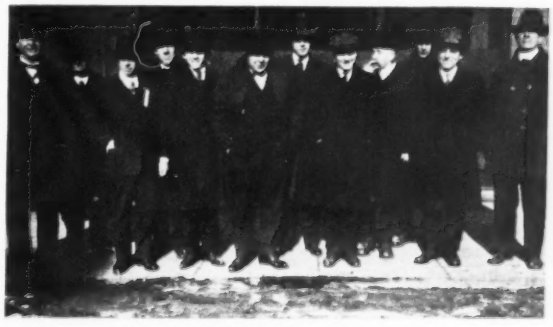
M. P. Weston, 1854 East Walnut Street, Des Moines, will install the plumbing in the $8,000 residence to be erected at 4222 Forest Avenue.

Lavelle & Hogan, 521 Pearl Street, Sioux City, have been awarded the contract for the installation of modern plumbing in a $8,500 residence to be erected at 2100 Lacy Avenue, for R. C. Birch.

Pesor & Persor, Mason City, have secured the plumbing and heating contract on a $14,000 residence to be erected for Arthur Louden, and in a $5,000 residence to be erected for O. T. Wildman.

H. Martin, Rockwell City, will install plumbing and heating in the $8,000 bank building to be erected for the Rockwell City National Bank.

Bruner & Salz, Waterloo, have been awarded the contract for the installation of plumbing and heating in the $7,500 store building now in the course of construction for Woods Bros.



The Cedar Rapids Delegation at the Recent Convention of Iowa Master Plumbers' Association, Held at Fort Dodge.—From "Domestic Engineering" Photo.

Seattle and Vicinity.

The general building situation in Seattle is showing up well for the month of January, considering the inclement weather of the past few weeks. Residence building has been somewhat retarded, but a large number of garages and business buildings are under way, and work has not been halted on them. Architects and contractors report that plans are under preparation that indicate building work of all kinds will be comparatively heavy during the spring, and will open up as soon as weather conditions become more favorable.

Conspicuous among the building activities in the residence sections is the number of high-class residences that have been built or are under way. In Carleton Park, several $15,000 to $25,000 homes have been completed, and Dr. Cecil I. Tenny is having plans repared for a residence that will cost $25,000.

The Sixth Church of Christ, Scientist, has had plans prepared for a new church structure at 2655 Forty-second Avenue Southwest, to be 100x76 ft. and to cost $50,000.

Reports from various districts in the Puget Sound country indicate that a pretentious building program is being outlined, and will be started as soon as spring sets in. In Whatcomb county, a school building program has been planned that will involve the expenditure of more than $100,000 in rural schools. The township of Blaine will build a structure at a cost of $35,000, to be used as a high school. Plumbing and heating contractors will be asked to submit separate bids for plumbing and heating, and are expecting a good run of work from this source.

The year 1920 finds Bremerton, the site of the Puget Sound Naval Yard, in the grip of a building boom that will set new precedents. Within the next 60 days, construction will begin on new buildings that will cost $50,000, comprising a number of business blocks, as well as scores of residences and apartments. The government's program of home building did not begin to provide the accommodations needed to care for the increasing population. Plumbing and heating contractors in Bremerton have had a most successful and busy year, and look forward to equal prosperity in 1920.

Other Cities in the State.

Voters of Sumner have passed a bond issue of $52,000 to provide for the construction of four new school buildings in 1920.

The District of Orilla plans the construction of a new school building to cost between $20,000 and $30,000. The structure will be of brick construction, will contain four class rooms and an assembly room, and the plans will be prepared by William Mallis, 409 Lyon Building, Seattle.

The Merchants Hotel Co., Port Angeles, plans the construction of a new hotel in that city, which will be four stories, 75x122 ft., and contain 100 rooms. The structure will cost about $100,000.

All bids opened recently for the David S. Troy Building at the Washington State College, Pullman, were rejected, because they exceeded the estimate.

The Witter Engineering Co., of Pullman, has been awarded the contract for plumbing on the third floor of the James Wilson Hall and the second floor of the Mechanic Arts Building.

Whitworth College, Spokane, according to Dr. A. Y. Beatie, president, plans the construction of a $200,000 building project during the spring. The expansion plans include an administration and instruction building to cost $100,000, and a dormitory to cost about $75,000. The third building will be a central heating plant to be erected at a cost of $75,000. Plans have been drawn for the structures, and bids will be called for shortly.

The Yakima School Board has commissioned W. W. De Veaux and T. R. Jacobs, architects, to prepare plans for a 15-room addition to the Yakima high school, a gymnasium and cafeteria, and an 8-room addition to the McKinley School.

Henry Newman, director of the Arcade-Liberty Theater in Hoquiam, has purchased a site on which will be erected a large new theater during the summer. The building will have a seating capacity of about 1,250.

Portland and Vicinity.

Several investment companies and contractors have completed plans for a building campaign in Portland of medium priced houses and bungalows, to cost from $3,500 to $5,000. The work will be started early in the spring.

The Pacific Telephone & Telegraph Co. plans the construction in Portland during the spring and summer of three new telephone exchanges, involving the expenditure of more than $1,000,000.

Architects Houghtaling & Dougan, Elks Club Building, Portland, have been commissioned to prepare plans for a one-story, 100x100 ft. automobile structure to cost $20,000.

Finnigan & Williams have received the contract for installing heating and plumbing in the new $125,000 Catholic School to be built at Silverton.

The city council of Portland plans the construction of four comfort stations in various parts of the city. The work will be started in the very near future.

Architects Strong & McNaughton, Corbett Building, will shortly call for general and sub-contract bids on the proposed one-story, 100x100 ft. concrete building to be built for the Portland Laundry Co., at Union Avenue and Mill Street.

The Commission of Public Docks, Portland, is receiving bids for a complete heating plant in the St. Johns Terminals.

Architects Lawrence & Holford, Chamber of Commerce Building, Portland, have completed plans for the proposed Berkshire Apartments to be built by C. V. Everett, Portland. The structure will be six stories, 79x150 ft., and cost about $225,000.

Architects Johnson, Parker & Wallwork, U. S. Bank Building, Portland, have received commission to prepare plans and specifications for the proposed Albertina Kerr Nursery at East Twenty-second Street and Sandy Boulevard. The structure will be U-shaped, covering a ground area of 125x50 ft., and will cost about $50,000. Plans will be ready for bids in about three weeks.

The Dausch-Weber Heating & Engineering Co., Portland, has secured one of the largest heating and plumbing contracts ever let in Portland, that for installing the plumbing, heating and mechanical equipment in the new $1,500,000 Montgomery Ward Building in Portland. The contract will exceed $140,000.

Parker & Banfield, Portland, received the general contract for a three-story apartment house in Pendleton, to contain twenty-seven suites. Robert Thompson, Pendleton, received the plumbing contract, and heating award went to Finnigan & Williams, of Portland.

O. Peterson, Astoria, president of the Astoria Savings

Bank, plans the construction of a new two-story apartment house, 112x26 ft., of frame and stucco construction, at a cost of $20,000. There will be six separate five-room flats. A modern steam heating plant will be installed.

M. A. Standish, The Dalles, has been commissioned to prepare plans for a new $50,000 union high school, to be built at Redmond, early in the spring.

Other Cities in the State.

The Ruiter Sanitarium Co., Roseburg, has been incorporated by Dr. V. L. Ruiter and R. D. McFarland, the latter an architect of Boston, Mass., who will undertake to establish a tuberculosis sanitarium in practically every state in the union. The first structure will be a pretentious sanitarium near Roseburg, to cost $225,000, for which plans are now under way.

The Roseburg Development Co., of Roseburg, has been formed by George K. Quine and others, who have purchased the old McClellan Hotel. The structure will be completely remodeled, a steam heating plant and a number of additional bathrooms will be installed.

The Bend School Board is considering the installation of a new heating plant.

Wisconsin

The Functions of the State Department of Engineering in Regard to Domestic Sanitary Engineering.

The activities in this field cover, in general, private waste disposal and water supplies, public comfort stations, school and fair toilets, educational propaganda and co-operation with public as well as private agencies working for improvement of sanitary conditions. A study is made of laws relating to general sanitation and its improvement. The lines of work include:

1.—Proper design, construction, care and upkeep of privies, and location as to convenience and the source of domestic water supply.

2.—Abolishing of privies by ordinance or through education, where public water supply and sewerage systems are available, or a public or private system can be provided.

3.—Improvement of school toilet facilities:

a. Outdoor toilets of various types.

b. Indoor toilets, water-flushed, chemical and dry closets.

c. Their design, installation and care.

4.—Furthering of pure water supplies and safe waste disposal by:

a. Co-operating with all agencies working for the construction or extension of public water and sewer systems.

b. Conducting investigations of private water and sewerage facilities and giving advice for improvement.

c. Preparing plans, specifications and installation instructions for residential water supply and sewage disposal systems and toilet facilities for schools, places of employment, etc.

d. Directing enforcement of the public comfort station law, which requires all municipalities to provide public toilet facilities. Assistance is given to communities in the selection of locations and in the design and equipment of the buildings, and instructions are furnished for their maintenance.

e. In co-operation with county fair societies and with other state departments interested, practical assistance is extended in providing modern toilet and rest room accommodations at fairs.

f. Conducting educational propaganda along these and related lines in the field of sanitation.

g. Co-operating with other state agencies in the solution of sanitary problems, particularly:

With the Industrial Commission, in re toilet requirements for places of employment and similar public and semi-public buildings as contained in the State Building Code.

With the State Department of Public Instruction in re school water supply, toilet and washing facilities.

With other state departments, local officials and governing bodies in re toilets, drinking facilities, etc., upon own initiative and upon request.

The Plumbing Establishment of W. R. Mehlhorn, 3302 Vliet Street, Milwaukee, Wis.

Beloit.

Sanitary Plumbing Co., 407 Public Avenue, Beloit has recently completed the installation of heating systems in several residences in the city, and has just finished the erection of a new addition to its building which is being used as a stock room.

Missouri

St. Louis and Vicinity.

The past week saw an increase in large plumbing work in St. Louis, due to a moderation in weather conditions. Contracts connected with construction, which was pushed far into the winter, have been able to resume to a certain extent the work they were forced to abandon. Jobbing orders have shown a slight decrease giving master plumbers a chance to catch up with delayed work. Even now it is practically impossible to get next-day service on jobbing of any size. Many concerns have adopted the plan of making temporary repairs to relieve emergencies and returning at a later date to finish the job.

The present business, however, is not the chief concern of plumbing contractors. They are given most of their attention to delayed deliveries by manufacturers of goods which they will need early in March when building begins in earnest. There is no doubt that next season will be the biggest in the history of St. Louis, and it is certain that plumbing concerns will not have to wait until it is at its height to do their biggest work. There are many big jobs which will be ready for them as soon as weather permits them to work. In the meantime jobbers and manufacturers are making every effort to increase their stock and to facilitate deliveries. Traffic managers are taking

much interest in the railroad situation and wondering how the freight car shortage will affect the movement of their goods.

The Hunt Heating Co. has been awarded a contract to install a steam heating system in the Warwick Court Apartments, owned by A. Corn. Two buildings will be heated from one unit. The contract calls for $3,100 worth of work.

The Bayer Steam Soot Blower Co. has awarded a contract to Joseph Kjar, 2730 Hebert Street, to erect a one-story foundry, 60x160 feet, at 4065 Park Avenue. The building will cost about $30,000.

Architect J. Klutho, Syndicate Trust Building, St. Louis, will soon take bids for the erection of a new $250,000 college building for the Chaminade College at Clayton, Mo., a few miles from St. Louis.

California

San Francisco and Vicinity.

Builders are keenly interested in the plans for the new and enlarged Crocker Building at Market and Montgomery Streets. When completed, the structure will become one of the largest office buildings on the Pacific Coast. Plans for the addition to the present Crocker Building are not perfected as yet, but are being worked out under the direction of H. S. Cook. It is expected that the contract for plumbing, heating and ventilating work on the structure will be one of the largest of its kind.

On recommendation of the Supervisors' Finance Committee, an appropriation of $45,000 is to be set aside for plans and specifications for alterations and improvements on city school buildings.

Figures are now being taken for a two-story addition to the present class C building at the northwest corner of Pine and Front Streets. The estimated cost of the work is $25,000.

A building permit has been requested for the erection of a one-story auto sales room at the southwest corner of Market and Dolores Streets. The estimated cost is $53,000.

Architect Henry H. Meyers is preparing plans for a two-story reinforced commercial structure to be erected in Clay Street, near Sansome. The building will cover an area of about 10,000 sq. ft. and will cost in the neighborhood of $40,000.

Plans are now complete and figures are to be taken shortly on the construction work for a two-story service building and warehouse, which is to be erected at Fifth and Martha Streets.

Architect Ernest Coxhead, of this city, is now preparing plans for a $45,000 commercial building to be erected in San Francisco, as well as a $30,000 apartment house, also in this city.

The region west of Twin Peaks in San Francisco is now the scene of one of the greatest development eras in the history of the city. Residences are going up fast and of the type which is becoming more and more popular in this city, that of the bungalow and two-story bungalow houses. All trades allied with building activities report a considerable amount of business out of this district and are looking forward to similar growth in other parts of the city and also on the peninsula. Another notable development is that of San Carlos, a suburban section south of the city. Thirty houses were recently completed there and at the present time a number are under course of construction, while several more are being planned.

Figures will be taken shortly on a two-story and basement garage, which is to be erected on the north side of Geary Street, east of Van Ness Avenue. The structure is to cost $50,000. The architect is Joseph L. Stewart. Architect Stewart is also preparing plans for a one-story warehouse and sales building for Twelfth Street, near Howard. The cost of this structure is $35,000.

Architect Henry H. Gutterson is now preparing plans for ten two-story and basement frame houses to be erected in St. Francis Wood. Each dwelling will contain eight rooms and basement garage and will range in cost from $8,000 to $12,000.

Four residences were recently completed in the Mount Vernon Tract. These are the first of the hundred and fifty bungalows which are now under construction.

Architects O'Brien Bros. are taking figures for a two-story addition to the class C building at the northwest corner of Pine and Front Streets. The addition will cost in the neighborhood of $25,000.

Plans are now being prepared for a store and machine shop building, which is to be erected in Post Street, at an approximate cost of $155,000.

Plans for a convenience station at the ocean beach near the end of Fulton Street, which will cost about $25,000, have already been prepared by the city engineer's office and construction work is to start shortly.

Other Cities in the State.

The sum of $400,000 has been appropriated by the Navy Department for an oil depot at Mare Island.

The contract for the erection of a $250,000 apartment house, to be built at Broadway and Santa Clara Streets, in Fresno, has been awarded to Prichard Bros. The plumbing, heating and ventilating systems are to be of the latest and most approved design.

A building containing a swimming tank and gymnasium is to be erected in Benicia, according to plans recently drawn by the engineering department of the Benicia arsenal.

Klemmer Bros., of Willows, have been awarded the contract for the plumbing work on ten bungalows which have just been started.

The contract for the building of the two-story and basement department store building which is to be erected in Tenth Street, between K and L Streets, Modesto, has been awarded to George J. Ulrich, of Modesto, on a percentage basis. The building is estimated to cost in the neighborhood of $90,000.

Idaho

Contract for the proposed new apartment house to be erected on Normal Hill, Lewiston, by Frank Thompson, has been awarded to Robert Meyer on a bid of $54,944. Contract for the plumbing and heating was awarded to Charles Hahn, Lewiston, on his bids of $9,092 and $5,983, respectively.

The Northwestern Investment Co., of Pocatello, plans the construction of 150 houses in the cities of Pocatello, Twin Fall, Nampa and St. Anthony. The houses will be five and six-room structures. Thirteen homes are under construction in Pocatello.

Earl Felt, Twin Falls, has been awarded a contract by the Pocatello Security Trust Co., for the construction of forty-three residences in Twin Falls, involving an expenditure of $200,000. The structures will be five to seven-room homes.

The city clerk of Vollmer is receiving bids for construction of the new city hall, two stories, 65x30 ft., of brick construction. Separate bids will be received for general and sub-contracts.

Indiana

Indianapolis.

Valuations for building operations in Indianapolis during the month of January reached a total of $1,300,000, approximately six times more than in January of last year, when the total was $219,216, according to figures compiled by Carl Hays, chief clerk of the Building commissioner's office. Permits on property valuation of $550,000 were issued in one day. Included in the permits for the one-day valuation were three which exceed $100,000. They were the Vonnegut Machinery Co.'s warehouse, $200,000; the Frank Hatfield Co.'s Building, Capitol Avenue and Emmett Street, $140,000; and the United States Corrugated Fiber Box Co's. plant, $120,000. The Fiber Box Co. obtained a permit for a three-story fire-proof factory building, to cost $110,000. The additional building will be for a sales and service station for automobiles. The total cost of construction, including plumbing, lighting, etc., will be about $200,000. Plans for the Vonnegut Machinery Co's. building call for a large two-story structure about a half-block in dimensions. Another large permit issued on the same day was for a service station for Wangelin & Sharp to cost about $50,000.

The Indianapolis city health department is planning several revisions in the city plumbing ordinance, according to an announcement this week by Dr. Herman G. Morgan, secretary of the board.

The Cotton & Wiebke Co., 1720 East Tenth Street, has been awarded the contract for the installation of plumbing and heating systems in the new addition to the Advance Rumley Co's. warehouse. The new structure will cost about $50,000.

A. D. Bremer, 1863 Shelby. Avenue, has been awarded the contract for plumbing installations in J. Brandon's and F. Irvington's residences and in three new residences on Rockwood Avenue.

Freyn Bros., 31 West Michigan Street, will install plumbing and heating in the Indianapolis Post Office, the Technical High School, the Frank Hartwell Ford Motor Car Agency's Building, the Polk Memorial Building, the Gladstone apartments and in a number of other buildings in the city.

Kretsch Bros., 636 Virginia Avenue, have recently secured several contracts for plumbing and heating installations.

B. C. Torelle Co., 902 Ft. Wayne Avenue, has been awarded the contract for the installation of plumbing and heating in the Blackerne Building, containing 121 apartments. This company is also completing plumbing and heating installations in four large apartments and garages on North Pennsylvania Avenue.

Frank Stewart, 938 Massachusetts Avenue, has secured the plumbing and heating contracts on Charles Lavelle's apartment building and the Hitz Baking Co.'s plant.

Albert C. Paetz, 829 Ft. Wayne Avenue, has been awarded the contracts for the installation of plumbing and heating in the Indianapolis and Franklin branches of the Wilkinson Lumber Co.'s offices and factories, and in a number of other large establishments in the city.

Rauch & Son, 40 McClain Place, will install plumbing in the Federal Pattern Works, and in five residences on Maplewood Road.

Muncie and Vicinity.

Building activities in the city of Muncie have been very satisfactory and many large building operations are being planned for the future, among them being the T. W. War-

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Dear Bill:

You remember my promise to you at the Convention. I was to keep you posted and pass along any new business helps and advice my experience finds worth while.

You know I'm a great believer in the Kenney Shower line; just learned that they've changed list prices and discounts, you'd better write to the company for a copy for yourself. The new profits show up better than ever.

And Bill, right now while I'm on the subject let me say again that the plumber who pays attention to the retail end of his business is going to have first bid on the big stuff of his community; one leads to the other. Yours,

J. J.

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ner Mfg. Co.'s new factory, the new Muncie Hotel, the Junior High School and the new district school.

The Master Plumbers' Association, of Muncie, reports a 100 per cent attendance at all meetings and all members are very enthusiastic about association work. Much credit is given to Earl L. Clevenger, president, and J. A. Gallivan, secretary and treasurer.

A. B. Wetherill, 200 North Walnut Street, will install modern plumbing in the General Motor Co.'s. plant, and plumbing and heating in the Wood's apartments.

Clark Bros., 317 East Main Street, have secured the contract for the installation of plumbing in the Central Garage, and in the residence of Ray Johnson, Charles Davis, and Mrs. S. F. Lincoln.

W. A. Mahoney, 108 North Mulberry Street, has secured the contract for the installation of plumbing in ten residences for the Heckin Park Land Co., and in the residence of Clyde Stick on Kildare Avenue.

Homer J. Green, 108 West Washington Street, reports a very profitable business having recently completed plumbing and heating installations in fifty residences.

Earl L. Clevenger, Muncie, has secured the contracts for the installation of a water supply system at the Beach Grove Cemetery, the heating in the garage of the Anderson Transfer Co., and in the residence of Joseph Davis at Muncie.

Wm. Brattain, 201 North Height Street, has been awarded the contract for plumbing installations in five residences for the Hartley Agency. He has recently completed plumbing installations in 50 single residences for the Citizens Service Co.

J. A. Gallivan Co., 316 East Main Street, has several large contracts on its books at the present time and reports a prosperous outlook for the coming months.

Noblesville.

Fred V. Edwards Co., Noblesville, will install modern plumbing in the new addition to the county infirmary, the heating in W. Harron & Sons' salesroom and garage, plumbing in the country residence of Walter Marmon at Millersburg, and the plumbing and heating in several other residences in the city.

W. H. Crawford, Noblesville, is installing the heating systems in the Stock Pavilion, a new garage at Westfield, the Noblesville Garment Co.'s building, and the plumbing and heating in the Ford Service stations at Noblesville.

Evansville.

Building operations at Evansville, during the year 1919, amounted to $1,576,886, according to the records of Edward C. Kerth, city building inspector. This is an appreciable increase over 1918, but, due no doubt to war conditions, it is a decrease over the 1917 and 1916 records. Not a single apartment house was erected during the year, the records show, and the largest permit for a home was one for $15,000. On the other hand it was the greatest remodeling year in the city's history. Members of the building trades believe the building for the year was hampered to a great extent by the belief that prices on building material would later decrease. They believe, however, that 1920 will see the largest building year in the city's history.

Terre Haute.

P. J. Soames, 1228 LaFayette Avenue, Terre Haute, has been awarded the steam heating contracts on new buildings for the Giffel Sales Co., Engle Bros. and Ford Repair Co., also on the Sam Goodman Building, and both the heating and plumbing for the Terre Haute Tent & Awning Co.'s new building. Mr. Soames has developed into a high-grade heating and plumbing contractor, starting in a small way a number of years ago, and enjoying gradual expansion due to his energy and initiative, and his reputation for honest work

Pennsylvania

Pittsburgh and Vicinity.

The Pittsburgh Chamber of Commerce, the City Council, the Builders' Exchange, the Carnegie Institute and other powerful organizations have inaugurated a building campaign involving an expenditure of not less than $15,000,000 in the next five years. It is proposed to build 1,000 houses each year, to be sold to workingmen. The plan was presented at a recent meeting of the Chamber of Commerce by Dean William H. Walker, of the School of Economics, Duquesne University. Immediately the chamber approved the idea, it was taken up by council and other bodies and is now in process of development by its sponsors. It is considered likely that a corporation will be chartered by the Chamber of Commerce under the laws of Pennsylvania with a capitalization of $10,000,000, all common stock, with additional capital, if needed, from bonds secured by mortgages on the various properties, the mortgages being placed in the hands of trust companies for the benefit of the bond holders. Dr. Walker says: "It is evident that 1,000 houses per year, for five years, under a gradual building program, would not exceed a cost of $15,000,000 in the aggregate. The maximum investment at the end of this period probably would not exceed $8,000,000." Under Dr. Walker's plan, it is said, a steady program of building would not demoralize industry and would be an added stimulus to Pittsburgh business. It is admitted that while costs of building are high now, there is no indication that there will be any material reduction in the next few years. The city council quickly followed up the presentation of Dr. Walker's plan with the adoption of a resolution exempting all residences erected in the next three years from municipal taxation for three years. After this resolution was adopted, another councilman moved that the council indorse the plan offered by Dean Walker, and the motion was unanimously passed. It was then stated that business men are already asking for more definite information as to the building program, in order that they can regulate their business accordingly. In connection with the general movement James Kelly, vice-president of the Mellon-Stuart Co., general contractors, in an address to the Real Estate Board, said that the cost of construction was normal now, since those in touch with building conditions recognized that pre-war times would not return in the building business. The young members of the building trades, he asserted, had been lured away from Pittsburgh by high wages elsewhere, these districts having started building campaigns in the latter part of 1919. The older mechanics, he stated, are still here and Pittsburgh ought not to lose any further time or opportunities. In the same connection Col. Samuel Harden Church, chairman of the board of Carnegie Institute, approving the Dean Walker plan of house construction here, said that a campaign to build 1,000,000 houses in America would do more to allay the popular unrest than any other step in the whole scheme of social justice. Further announcements concerning the formation of the corporation are expected in a short time from a special committee of the chamber which has the plan under consideration.

Building projects running into millions of dollars, have been announced here within the last two weeks. Among the most important are a new banking and office structure to be erected by the Mellon Bank at the corner of Fifth Avenue and Smithfield Street, the estimated cost of which will be several millions in itself; a new home for the Young Men's Christian Association at Wood and Third Streets, to cost

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about $800,000; a four-story building for industrial and dwelling purposes by the Pittsburgh Association for the Improvement of the Poor; a modern office building on the site of the present Monongahela House for B. F. Jones, Jr., president of the Jones & Laughlin Steel Co., a large ice plant by the Mt. Oliver Ice Co. and a new commercial garage at Baum Boulevard and Liberty Avenue, the latter to cost about $150,000.

Plans for the Mellon Bank Building, which is to surpass anything of the kind in the state of Pennsylvania, are now in the hands of a New York architect. Vice-President W. S. Mitchell recently acknowledged that plans are almost ready, but refused to go into details regarding the enterprise.

Work is to be started on March 1st on the new home for the Poor Association, contractor having commenced to raze the structure now on the property. The building is expected to be completed by September 1st.

Frederick A. Shipp, secretary of the Y. M. C. A., said that the new association building will be one of the largest and most complete of its kind in the country. It will include two gymnasiums, with showers, swimming pool and general baths.

B. F. Stout has applied for a building permit for a brick and fireproof commercial garage, to be erected in Baum Boulevard and Enfield Street, Eighth Ward, to cost $75,000. Baum Bros. have taken out a city building permit for a three-story addition at Island Avenue, near Preble, North Side, to cost $55,000. The Chatfield & Woods Co. has taken out a city permit for an eight-story concrete structure at First, Second and Short Streets, First Ward, to cost $312,719, and the Pittsburgh Press Publishing Co. has secured a permit for a four-story brick and concrete building at Second Avenue and Brewery Street, to cost $57,000.

Plans are being prepared for a borough building at West Brownsville, the approximate cost of which is to be $15,000. Bids are being taken by Emil Johnson, Uniontown.

Bids are being received for the plumbing, electric wiring and heating for a four-room brick school building and auditorium at Clifton. Edwin V. Denick, 1212 House Building, is the architect.

PHILADELPHIA MASTER PLUMBERS' ANNUAL BANQUET.

National Vice-President D. F. Durkin Honored.

A regal turnout was made on Wednesday evening, January 28th, by the members and friends of the Philadelphia Association of Master Plumbers to celebrate their annual banquet and ladies' night. The event took place at Scottish-Rite Hall on Broad Street, where the large ballroom was given over to the enjoyment of a well-planned program.

An hour was given over to the reception of the guests before the big event of the evening started. This was a delectable menu interspersed with good music and vaudeville specialties.

At 10:30 o'clock President Wm. M. Anderson, as toastmaster, started the second number by extending to the guests the hearty welcome of the officers.

National Vice-President D. F. Durkin told his hearers of the purposes and accomplishments of the National Association.

Past President John Trainor, of Baltimore, with vigor and characteristic eloquence impressed the members with the necessity for individual loyalty to the association.

Walter D. Nolan, of Washington, D. C., another past National President, congratulated the association on its work and advancement.

Former National Treasurer William McCoach concluded

a brief talk on association affairs with the presentation to Mr. Durkin of a handsome electric floor lamp as a token of appreciation from his associates for his devotion to the work of advancing the interests of the association.

Mr. Durkin briefly voiced his thanks in a hearty manner.

Dr. Wilson, the well known orator of Philadelphia, who spoke on Americanism, Judge McNichol, Richard Wegelein, president of the City Council, and State President William Logan, of Harrisburgh, concluded the speech-making.

The affair concluded with a long program of dancing.

As souvenirs of the occasion the ladies received boxes of chocolates.

New Jersey

Newark.

The Newark Association of Master Plumbers will hold its annual banquet on Wednesday evening, February 11th, at Achtel-Stetters on Broad Street. S. F. Wilson is chairman of the Committee on Arrangements, and the members and friends of the association know there is a good time in store, for Mr. Wilson gained a reputation as a top-notch fixer at the last outing.

Architect Wm. E. Lehmann, 738 Broad street, Newark, is preparing plans for a three-story factory to be erected at 3-9 Highland street for Chas. W. Oathout. It is estimated that the structure will cost in the neighborhood of $125,000.

Paterson.

The Paterson Master Plumbers' Association has recently elected officers for the ensuing year, as follows: Chris. De Graaf, president; John Taylor, vice-president; L. Vreeland, recording secretary, and W. Keys, financial secretary.

Chris. De Graaf will install modern plumbing in a garage for Mr. Teele and in the mill now being erected at Hawthorne.

Abe Coningswood has recently opened a plumbing establishment at 78 Arch Street. He has already secured a number of contracts, among them being one for the installation of plumbing and heating systems in the new residence of Peter Hanon at Passaic.

George H. Reid will install plumbing and heating in the United Reed & Harness Co.'s. plant, the Van Peer Mill, the plumbing and drainage in the Consumers' Baking Co.'s. stables.

George S. O'Neil has secured the contract for the installation of modern plumbing in the Barton Silk Mills.

E. A. Stanley, 312 Van Houten Avenue, will install plumbing and heating in four new residences in Rutherford. He will also remodel the plumbing system in the Van Ness Lumber Co.'s office.

Sam Katz has recently opened a plumbing and heating establishment at 477 Main Street and has secured contracts for plumbing and heating installations in two new houses in Paterson.

George M. Mitchell Co. is installing plumbing and heating systems in the Hawthorne Hosiery Mill, the Eldie Building, the Oriental Silk Printing Co.'s plant and in a number of other buildings.

J. H. Cadigan & Son, 639 Main Street, have recently secured contracts for remodeling the plumbing in several residences.

Frank A. McBride Co., 325 Grand Street, has been awarded the contracts for the installation of plumbing and heating in a new silk mill, the Hawthorne School, the residence of E. A. Brown, and in the Hawkenbush & Co.'s. garage.

Robert F. Ash, 642 Madison Ave., is installing plumbing and heating in the Van Bruelin Mill, and in the residences of Dick Benson and Charles Cole.

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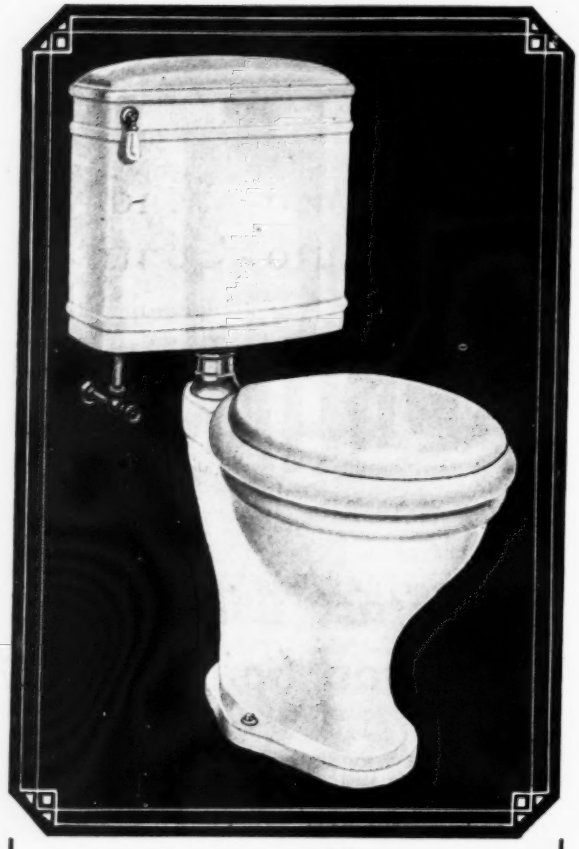

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New York

Syracuse.

William Naughton & Co. are installing plumbing and heating in an eight-family apartment building for A. J. Venette, and modern plumbing in the H. H. Franklin Co.'s plant.

Claude L. Mardin is installing plumbing systems in 25 houses in the city.

F. D. Bourke has again opened a plumbing and heating establishment after three years in the real estate business.

Wm. George & Co., 122-124 North Warren Street, will install the heating in the new paper plant for the Onondaga Pottery Co., the Dursten Gear Co's. new plant, the New Greenway garage, and the plumbing and heating in the Hancock Schuyler Building and the new addition to the Truax Hotel.

Charles A. Snavely, 411 South Avenue, will install modern plumbing in the new residence of John Swiderski and in four new houses for the Langden Realty Co.

Frank J. Ryan will install modern plumbing in three new houses in this city.

R. Joseph Carney, 503 Wolf Street, has secured the contracts for remodeling the plumbing in several residences.

M. F. Burke, 644 South Warren Street, has secured the plumbing contracts on five new houses.

F. Group & Sons, 607 North Salina Street, will install plumbing in the Strowell, Ellis and Cooper residences and the heating in the Corbet garage.

F. H. Rinehart, 506 Westcott Street, is completing the installation of plumbing in the Syracuse Rubber Co.'s. plant, and will install modern plumbing in the Pin Dyneto Electric Co's. plant, and in thirteen family apartments.

Gaebler & Pabst, 1436 Midland Avenue have recently opened a plumbing establishment at 1436 Midland Avenue and has secured contracts for plumbing installations in six new houses.

John F. Welch, Syracuse, has secured the contract for the installation of plumbing and heating in Edward Conroy's new residence, and in a large factory recently erected in Syracuse.

W. J. Brown has recently completed plumbing and heating installations in a large apartment on Goodman Street and is at present installing plumbing and heating in a new garage for the Reenan Bros. Realty Co., and the heating in the Consolidated Milk Co.'s plant.

Wright & Alexander have a number of plumbing and heating contracts on their books.

Rochester.

Arthur B. Reddington formerly connected with the Murtagh & Reddington Co., has opened a plumbing establishment at 218 South Avenue. He will install modern plumbing in the Morrisville School of Agriculture, and in Dr. A. Almy's new residence.

The Flower City Heating & Plumbing Co., Inc., has secured the contracts for the installation of plumbing and heating in eleven houses for the Carol Real Estate Co.

Benj. Fanning, 31 Exchange Street, has recently secured several contracts for plumbing and heating installations.

Geo. Stallman, 479 Main Street, has recently completed plumbing installations in Wm. Hauck's new factory, in two new residences for Morris Clark, and the heating in B. N. Simpson's residence.

Vandetberg & Miller are installing plumbing and heating in the Weekfield Reality Co.'s property.

D. A. Alexander has been awarded the contract for the installation of plumbing and heating in the Stewart building.

The Caldwell Co., 641 Park Avenue, have a number of good plumbing contracts on its books.

George Bay, 1260 St. Paul Avenue, has recently opened a hardware store in connection with his plumbing and heating establishment.

H. W. Dean, 479 North Goodman Street, has recently completed the installation of plumbing and heating in a large number of one family houses.

F. W. Murtagh, is now located at 26 Pleasant Street, having dissolved partnership with Mr. Reddington. He will install heating systems in the Wheeler Green Building and in the Newark State School for Mental Defectives.

Frederick Liese is installing the plumbing in eight houses for the Sibley Estate.

Other Cities in the State.

Stephen A. Kelley, Far Rockaway, is remodelling the plumbing in the Van Neer Building.

Thomas Cunningham, Tottenville, has recently completed the installation of two hot water heating systems and has started work on the remodeling of a number of heating plants.

E. Sevenbaar, Tottenville, is installing the heating system in the Spear Hat factory, two houses in Anadale, and the plumbing and heating in H. Dunham's new residence.

George Enright, New Dorp, has been awarded the contract for the installation of plumbing and heating in a residence at Great Hills.

Chas. Heweker, Tompkinsville, reports a busy season with a number of contracts on his books. He has recently completed the heating installation in Mr. Ferris' new home and will install a hot water heating system in the residence of Mr. Blackburne.

Massachusetts

Boston and Vicinity.

John Manning, of 342 Columbus Avenue, Boston, has the contract for plumbing and Frank E. Woodward, of 19 Friend Street, for heating, in connection with extensive alterations being made at the College Club on Commonwealth Avenue. About $20,000 is being spent on the building.

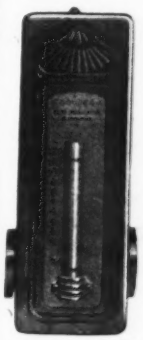
The contract for heating in a $20,000 public garage being erected on Rice Square, Worcester, for J. H. Fontaine, has been awarded to M. J. Maher Co., 816 Main Street.

John F. Capron, of Boston, is erecting a $15,000 summer home at Falmouth, for which the Falmouth Plumbing Co. has the heating and plumbing contract.

Lane & Malaney, of Newton, have the heating, and William H. Hockridge, also of Newton, the plumbing contract for a residence to be erected on Milton Road in that city for Richard Brownell.

Superintendent of Buildings, Howard L. Gibbs, of Brockton, in his annual report for 1919, recommends an outside heating plant for the Sprague School in that city. He also recommended a new boiler for the Paine School and said sanitary arrangements at the Kingman and other schools demanded immediate attention.

H. B. Clements, who conducts a plumbing and heating business at 16 College Avenue, West Somerville, is one of the busiest men in the trade in Greater Boston. In addition to his plumbing and heating business, Mr. Clements does an extensive business in automobile supplies and also conducts a bicycle shop. Notwithstanding that he is obliged to keep his place of business open every night, he still finds time to take an active part in the work of the Master Plumbers' Association, of which he is secretary.



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Regulates temperature **automatically,** without winding clock. Motor is driven electrically.

The Souder Regulator performs, without any attention whatever, all the work done manually by other heat regulating devices.

Saves coal, time and money. The equipment you are looking for.

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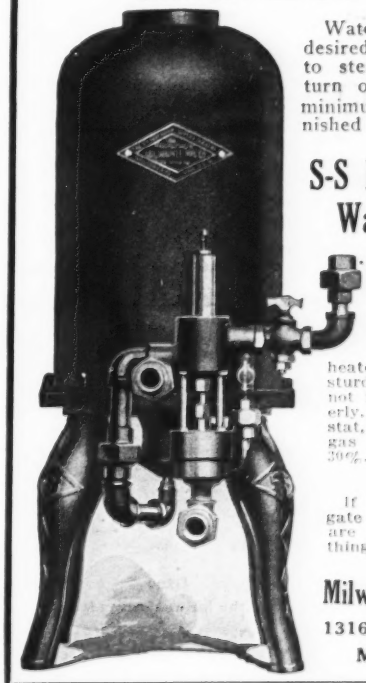

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S-S Instantaneous Water Heater

(Gas and Electric)

This heater possesses many advantages heretofore unknown in a heater. So simply and sturdily built that it cannot fail to operate properly. Eliminates thermostat, thereby reducing gas consumption about 30%.

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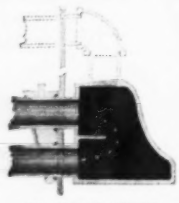
Smith's "CRESCENT" Heater



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Three sizes: 50, 75 and 100 Gallons.

Write for Catalogues of our different Heaters.

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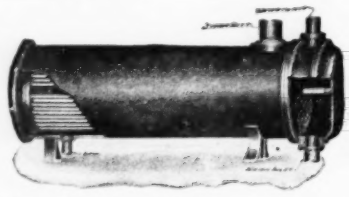

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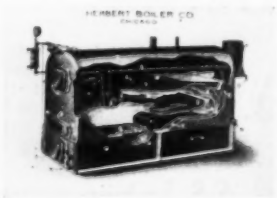
The Whitlock Coil Pipe Co.

HARTFORD, CONN.

"Whitlock Heaters Have Everlasting Copper Tubes"

HERBERT MAGAZINE WATER TUBE SMOKELESS BOILER



Has twice the fire travel of any boiler of its size.

Burns any kind of coal successfully; without smoke or gas.

Low water line. Wrought iron tubes double life of boiler tubes.

Easy set and moved in place—passes through small opening. Nothing like it built.

Write for particulars

HERBERT BOILER CO.

Root & La Salle Sts., Chicago

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Cast Brass

Shower Heads

With Removable Face

Made with or without Ball Joint in the following sizes:

3 in., 4 in., 4½ in., 5 in., 6 in., 6½ in. and 8 in.

As good as it is possible to make a shower head.

D200

Order From Your Jobber. Specify the Milwaukee. Made by

Milwaukee Flush Valve Co., Milwaukee, Wis.

Other Cities in the State.

Agitation has been started in Abington, by a "committee of mothers" for improvement of sanitary arrangements in the Dunbar School in that town. The committee contends that, if the town cannot afford to build a new school house—a new up-to-date sanitary system should be installed during the coming summer.

Charles A. Ludden, of Chicopee, was the lowest bidder on the plumbing and heating contracts on the Montcalm School addition at Holyoke. His bid amounted to $3,244.

Mayor James H. Kay, of Fall River, in preparing the annual budget of city expenditures for 1920 is making provision for new public convenience stations at all of the various parks in the city not so equipped. The matter has been under consideration for some time, and a year ago it was estimated that stations could be provided for $50,000. Costs, however, have risen very materially during the past twelve months.

Joseph Welsh, of Lawrence, has the contract for heating, and Joseph Berry, of Lawrence, for plumbing in twenty new dwelling houses being erected at Maynard for the Homestead Corporation of the American Woolen Co., as part of the company's plan to relieve housing conditions in mill towns.

A new heating system in the city hall building at Worcester was recommended by City Messenger M. C. French in his annual report to the city government.

Contracts for a new schoolhouse at Three Rivers have recently been awarded. The heating went to F. J. Hewes & Son, of Worcester, and the plumbing to R. E. Faulkner, of Palmer.

The committee appointed by the town of Buckland to have charge of the construction of a new schoolhouse to replace one burned recently, has decided in favor of a steam heating system instead of hot air as formerly used.

Rhode Island

Progress on the proposal for a public comfort station at Pawtucket has entered the stage of examination of appropriate sites. Dr. Charles H. Holt, superintendent of health, has been assigned to select a suitable site, and it is expected that the necessary appropriation will soon be forthcoming from the city government.

M. F. Murphy, of 11 Greenwich Street, Providence, has been awarded the contract for plumbing in a jewelry factory on Broad Street.

NEWS FROM VERMONT.

The extreme cold of the past month has interfered somewhat with building operations in Vermont, although it has furnished plumbers with more or less business in thawing out pipes. Very frequently Northfield or Burlington, Vermont, are the coldest spots on the weather map of the country, and below zero temperatures have been the rule rather than the exception during the month of January. Plumbers, however, are always optimistic and look forward to plenty of new work in the spring.

D. C. Campbell, who for the past two years has been employed by F. R. Graham in the plumbing business at White River Junction, has become manager of the plumbing business of E. C. Bridgham at Rutland.

The Rutland Power & Electric Co. has secured the contract for plumbing, steam heating and electrical work in a residence, on Washington Street in that city, for Alice Donahue.

Connecticut

Plans for a public convenience station at Central Park in New Britain are progressing favorably. A special council committee working on the project has had plans prepared and secured estimates of the cost of maintenance. The exact location of the station has not been decided upon.

Contracts have recently been let at Hartford for a 30-apartment building on Girard Avenue for Patten & Seigel. J. L. & M. A. Fierberg, of 1234 Main Street, will do the plumbing and C. P. Gaeberman, of 654 Weathersfield Avenue, the heating.

Katon & Dubey, of Hartford, have the contract for plumbing in a house on Fairlawn Street for L. J. Gervais.

A large new plant is being erected on Hallock Avenue, New Haven, for the Seamless Rubber Co., consisting of five buildings, some of which will be five stories in height. The Curtiss & Pierpont Co. is doing the plumbing and the Almirall Co. the heating.

The Bridgeport Post of the American Legion is making extensive alterations to a large residence recently acquired for use as a club house. The plumbing and heating contracts have been awarded to H. M. Clark, of Bridgeport.

Ohio

Cleveland and Vicinity.

Details of Cleveland's part in the convention of the Ohio State Master Plumbers' Association were completed this week by Eb Ellen, secretary of the state organization, in co-operation with H. W. Eckhárdt, general chairman of convention activities, and E. H. Benhoff, president of the Cleveland Master Plumbers' Association. It is proposed to have the convention open on February 9th with addresses by Mayor Davis, E. A. Roberts, secretary of the Builders' Exchange, and a representative of the Cleveland Chamber of Commerce. Daytime hours during the three days of the convention will be given over strictly to business. Evening entertainment will include a theater party at the Hippodrome, a banquet and an informal reception. The Women's Auxiliary's activities will be under the direction of Mrs. Charles F. Seifried, president of the local chapter. Others associated with planning the different events in connection with the gathering are: A. J. Penote, W. J. Warden, Lee F. Perry, George L. Roberts, John Leese, O. S. Stewart, L. W. Webb. Plans for entertaining at least 600 visitors have been made. At least 100 qualified delegates are expected to be present. Principal representation is expected from Cincinnati, Springfield, Dayton, Columbus, Akron and Canton.

A movement to amalgamate the membership of the different plumbing organizations into one group, the Cleveland Master Plumbers' Association, has been started. Membership to augment the main body will be drawn from the Master Plumbers' Council, the Century Club, the Progressive Club, the Brooklyn Welfare Club, and similar organizations. About double the present membership of the master plumbers' organization is expected from this move, bringing it up to about 200. This will create proper recognition of the local body from the state organization. At a special meeting of representatives of all these organizations, practically unanimous approval for joining

EXCELLO Iron Cleanout Tees With Brass Plug

Send us your orders for these, and save money. The tee is extra heavy, the brass plug is full size, and threads are iron pipe taper. Made in 2 in. and 4 in. We make a long line of plumbers' iron goods.

The Cooper Foundry Company
Atchison, Kans.

Heating Engineers and Contractors
should be familiar with the
Smokabate Swinging Arch

Converts Firebox Boilers Into Smokeless Boilers.
Pays For Itself in One Firing Season.
Easy to Install. Sold Under Guarantee.

RECOMMEND THIS PROFIT MAKER
SMOKABATE SERVICE CO.
127 N. Dearborn St. Chicago, Ill.

CROSS SECTION
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DETROIT HEATER

showing the REASON WHY it is the most efficient Water Heater.

The improved heat travel uses the most direct method of heating.

Attractive Sales Policy. Write Us.

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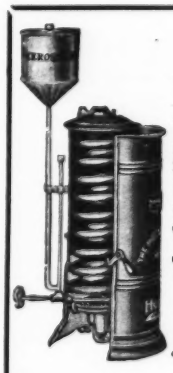

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WATER HEATER

WICKLESS burner generates its own gas and throws a clean, powerful flame.

Easy to operate and guaranteed for satisfactory service.

Once sold—stays sold—no comebacks.

THE HOTSTREAM HEATER CO.
CLEVELAND
"Makers of Heaters that Heat"

EXCELSO WATER HEATER

Heats domestic water just right at minimum cost.

A simple, one-piece casting connected below water line on outside of steam and vapor boilers. Does away with fire-pot coils.

Three sizes, for 40, 70 and 100 gals. capacities.

An easy seller and big profit maker.

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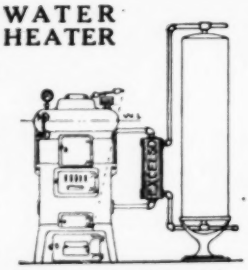

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601 WHITE BUILDING BUFFALO, NEW YORK

THE "S & K" RAINBOW SHAMPOO FIXTURE

A high grade fixture in every respect. Low price permits its use on any job.
Furnished complete with hose and sprinkler.
In ordering specify distance from center of cock holes.
Write for prices and details of the complete "S & K Line."

Street & Kent Mfg. Co.
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C-1091/2 Regular Compression

SANIBRASS

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Number 15—Patented

The largest selling fixture on the market for built-in bath tubs.

Write For Details and Prices.

SANIBRASS CORPORATION
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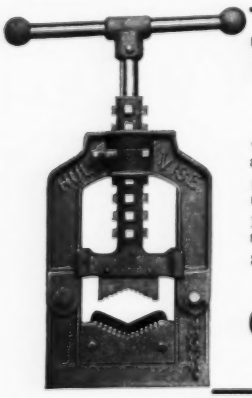

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75% quicker in adjustment than any other pipe vise on earth.

It is all in the sleeve and lock ring.

Positive action. Made for hard service. Protected by patent.

Sizes from ⅛ in. to 8 in.

Ask your jobber, or write

Columbus Machine Works
Columbus, Indiana

was voiced. The move is expected to make the Cleveland organization the largest local in Ohio.

An inquiry into the merits or demerits of the cost-plus system, adopted by most plumbing contractors here, has been started by the various factors in the plumbing and allied industries. A committee comprising Ed Maurer, the Maurer Bros. Co.; C. H. Mallett, the Schneider Plumbing Co., and E. H. Bohm, secretary of the Associated Plumbing Contractors' Cleveland Association, will report at an early meeting of the trade, at which time an uniform method of handling new business under abnormal conditions may be evolved.

Among the late social activities has been the annual banquet and dance of the Master Plumbers' Council, held at G. T. V. Hall, on East Fifty-fifth Street. About 150 persons were present, including about forty specially invited guests. The affair was arranged by M. H. Lipman, Sam Gaher and Emil Metzel. The speakers included: Ed Hobday, Plumbers' Credit Bureau; Frank Shriner, Secretary Driese, Brooklyn Welfare Club; Charles Ranger, city plumbing inspector.

The Weiss Plumbing Co. will continue its office at its present headquarters, 1111 Bolivar Road, following removal to its new building at Cedar Avenue and East Fifty-seventh Street.

Architect H. E. Shimmin, 2031 Euclid Avenue, Cleveland, is drawing plans for a $200,000 factory and office building to be erected at Forty-ninth and Newburgh Streets, for the L. M. Axle Co.

Architect Alfred W. Harris, 819 Schoefield Building, Cleveland, has prepared plans for a $200,000 residence and garage to be erected for James Brown, on Lake Shore Boulevard.

Architect S. H. Weis, 1322 Schoefield Building, Cleveland, is drawing plans for a $400,000, three-story theater and office building, to be erected at 14606 Detroit Avenue, Lakewood, for N. C. Cotabish.

The Scholl Plumbing & Heating Co., 109 East Commerce Street, Youngstown, has been awarded the contract for the installation of plumbing and heating in the $50,000 church and parsonage to be erected at Woodland and Williams Streets, Youngstown, for the St. John's Greek Orthodox Church.

R. E. Greene & Son Co., 4525 Detroit Street, Cleveland, has secured the contract for the installation of modern plumbing in the $25,000, one-story factory to be erected at 1323 West Nineteenth Street, for the Landesman Hirscheimer Co.

Architect Allen Osborne, Rose Building, Cleveland, has prepared plans for the $15,000, one-story garage to be erected for the Astrup Co., at 2937 West Twenty-fifth Street.

S. Gordon, 5208 Scoville Avenue, Cleveland, will install the plumbing in the $8,000 residence to be erected at 3472 East 123rd Street, for L. Farbam.

The W. G. Cornell Co., Cleveland, has secured the contract for the installation of plumbing in the $450,000 theater and office building to be erected at South Main Street, Akron.

Cincinnati and Vicinity.

The Thomas Dyer & Co. have been awarded the plumbing contract for the new Harriet Beecher Stowe School, to be built at Seventh and Carr Streets by the Board of Education.

William Hillenbrand is to do the plumbing work in the new addition of the Diem & Wing Paper Co.'s building.

The William Stacey Storage Co. is planning to build a $150,000 addition to its present plant on Gilbert Avenue. The new structure will be five stories high and will be constructed of concrete and steel and faced with brick.

The Central Master Plumbers' Credit Association gave a card party at Meidel's Hall on Wednesday evening, January 28th. Some record scores were made both in "500" and in euchre, both high and low, it is asserted. Following the games, a dance was enjoyed. About one hundred couples were in attendance.

The Ferro Concrete Construction Co. has been awarded the general contract for the $1,000,000 plant to be built on Gilbert Avenue for the Baldwin Piano Co.

Ed H. Morgan & Co., 3480 Reading Road, Cincinnati, have secured the plumbing contract on the $10,000 residence to be erected for Mrs. Louis Duhme, at Holly Lane.

Other Cities in the State.

Huffman & Wolfe Co., 669 North High Street, Columbus, has been awarded the contract for the installation of plumbing in a new $10,000 warehouse at Worthington.

The W. J. Scholl Co., 109 East Commerce Street, Youngstown, has secured the heating contract on the $125,000 grade and high school to be erected at Perry.

The Morgan Plumbing & Heating Co., of 135 West Spring Street, Lima, has been awarded the contract for the installation of plumbing and heating in the $15,000 factory to be erected at Central and Elm Streets, for the Banta Candy Co.

Michigan

Schonfeld & Miller, Monroe, have nearly completed the installation of modern plumbing and heating systems in E. C. Rauch's $200,000 residence. This firm is also installing the plumbing and heating in H. A. Bordeau's $75,000 residence.

O. A. Hankinson & Co., Ypsilanti, will install plumbing and heating systems in the new addition to the Peninsular Paper Co.'s. plant, the Corpwall residence and they will also install a vacuum heating system in the U. S. Press Steel Co.'s. plant.

M. C. Hawkins, Ypsilanti, has secured contracts for plumbing and heating installations in the residences of W. M. Davidson, E. M. Renne and Mrs. Martin.

The Hutzel Co., 119 East Washington Street, Ann Arbor, will install plumbing and heating in a new factory for the Cold Spring Co., in the Phi Kappa Psi Fraternity House, and in a number of other establishments in the city.

S. C. Andres, Ann Arbor, has been awarded contracts for plumbing and heating installations in two new banks at South Lyons and Manchester.

Georgia

Atlanta and Vicinity.

Building construction in Atlanta started off with a rush at the beginning of the new year. During the first eleven days of the year over $1,000,000 in permits were issued by the city building inspector. These figures for one-third of a month totaled more than those of any previous month in the history of the city. This is indicative of the great amount of work that will be done during the present year.

The Capital Plumbing & Heating Co. is just completing the plumbing contract for the $75,000 apartment house on North Boulevard for Hannah & Phagan. This firm has also been awarded a $3,500 contract for the heating

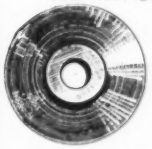
CUT DOWN LABOR COSTS

and do a better job of pipe cutting with the

B & B THIN BLADE

Pipe Cutter Wheel

Cuts through pipe with little resistance and fewer turns of cutter than other makes.



Does not spread metal apart—makes a clear, clean cut, reducing burr to the minimum.

Made of best tool steel, scientifically tempered.

Get a B & B Cutter Wheel from your jobber. Make any test you wish. Ask about our positive guarantee.

B & B TOOL & MACHINE WORKS

519 W. VAN BUREN ST. CHICAGO

Cutter Wheel Specialists

"Mor-Seal"

Made of Castex Whitest Vitrified China

Possibly "Morseal" is the Only Wash Down Closet for You?

It is Cleaner

Have You Thought About It?

CHICAGO POTTERY CO.

1924-40 Clybourn Ave.

CHICAGO

One of the 105 Styles of American Cast N. P. Lavatory Traps

The artistic design and smooth finish of AMERICAN Traps will appeal instantly to your customers.

Made perfectly smooth inside and out—deep water seal, full sized waterway.

You can depend upon the AMERICAN Line.

Write for catalog.

Fig. 301

AMERICAN SANITARY MANUFACTURING CO.

Abingdon, Illinois

Manufacturers of Fine N. P. Brass Specialties

TURNER TRADE HOT BLAST MARK **TORCH**

For Gasoline

has some new and interesting features.

Open type burner with which it is equipped, generates greater heat than the ordinary type. Superheats and properly mixes the air before it enters combustion chamber of burner, and is immune from wind and cold air currents.

Ask your jobber for the Turner

The Turner Brass Works

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Sycamore, Illinois

No. 202
List $16

"QUIK-OPE"

Bibbs, Bath and Basin Cocks stand the test of Service. It is built into them.

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THE HAYDENVILLE COMPANY
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Let This Sink In

The average home has NO possible use for a greater quantity of hot water than will be supplied, instantly, by the New Parrott Automatic Gas Water Heater. And if anybody tries to tell you differently—make them prove it. And the Parrott burns a lot less gas. And you make more money selling the New Parrott. Aren't these reasons enough?

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Don't Be Content
With Ordinary Roof Flashings
Specify and Use the Reliable
"SIMPLEX"
Made in
All Lead—Copper—Galvanized Iron
Every Flashing Adjustable
Every Flashing Perfect
Manufactured only by
Simplex Mfg. Company
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WATROUS
SANITARY PLUMBING FIXTURES
DUOJET

A line representing the most advanced ideas in Sanitation, Economy of Operation and Ease of Installations.
Duojet Closets—Flushing Valves—Urinals—Drinking Fountains—Self-Closing Cocks—Liquid Soap Fixtures, Etc.
Manufactured and Sold Exclusively by
The Imperial Brass Manufacturing Co
510 South Racine Avenue, Chicago, Ill.
ASK FOR CATALOG

and plumbing in the $25,000 home which is being erected by J. W. Peacock on Angier Avenue.

The heating and plumbing contract for the Palmetto station, of the Atlanta & West Point Railroad, has been awarded to the American Heating & Plumbing Co., of Atlanta. It also has secured a $5,500 contract to install the heating and plumbing in the residence of M. L. Morris in Atlanta.

The town of Plains has awarded contract to J. B. McCrary & Co., of Atlanta, to construct a water works system. The water will be supplied from a large artesian well which is now being sunk. The laying of the mains will begin March 1st.

Lynch & Johnson, Atlanta, have secured the contract for the plumbing installation in two residences now being erected for Mrs. B. H. Barr, on East Fifth Avenue.

Mell Plumbing Co., Atlanta, will install modern plumbing in the residence being built for A. H. Foster, 324 Myrtle Street.

Mapping Bros., Atlanta, have been awarded the contract for the plumbing installation in the residence of W. D. Miles in that city.

The Flournoy Plumbing Co., Atlanta, is remodeling the plumbing in the factory of the Continental Gin Co.

Walker Plumbing & Electric Co., Atlanta, is installing modern plumbing in the Securities Sales Co.'s plant at 64 Peachtree Street.

C. W. Baxter Plumbing & Heating Co., Atlanta, has been awarded the contracts for remodeling the plumbing system in the Superior Motor Co.'s factory on Stewart Avenue, and for the installation of modern plumbing in the residence now being built for J. P. Gordon, at 75 Park Avenue.

Richardson Plumbing Co., Atlanta, has secured the contracts for plumbing installations in three houses now in the course of construction for H. B. Schumpert, on Virginia Circle and 335 Page Avenue.

S. S. Shepard Plumbing Co., Atlanta, will install modern plumbing in the residence of J. H. Weisenant at 885 Highland Avenue.

Mell & Mell have secured contracts for the installation of several dental chairs in the Flat Iron Building.

Gresham-Jackson Co., Atlanta, is installing plumbing in the residence of A. H. Goodwin at 566 Washington Street, and will remodel the plumbing on the Collier Estate.

Boatenreiter Plumbing Co., Atlanta, has been awarded the plumbing contract on the residence of W. D. Webb at 104 Powell Street, and the warehouse being built for the Magnet Bros. Co., on Sampson and Irwin Streets.

Fred Cantrell Co., Inc., Atlanta, will install the plumbing in the nine-story building now being erected for the George Muse Clothing Co., on Peachtree and Walton Streets.

The Decatur Plumbing Co., Atlanta, will install the plumbing in the residence now being built for R. R. Cubbon at 33 Rosedale Road.

The Landers Plumbing & Heating Co., Atlanta, is installing a number of new fixtures in the Central Building and has secured the contract for remodeling the plumbing in the State Capitol Building.

Ollie Wingate Plumbing Co., Atlanta, is remodeling the plumbing system in the business house of Mr. Belcher at 441 Edgewood Avenue.

The Dixie Plumbing Co., Atlanta, has been awarded the plumbing contract on the residence of W. N. Howell, at 41 Palmetto Street.

The Gem Plumbing Co. will install plumbing in the residences of W. D. Beattie and J. H. Whitten and will remodel the plumbing in the offices of the Waco Oil Co.

TWENTY-SIXTH ANNUAL MEETING OF THE AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS

(Continued from Page 291.)

Five papers dealing with the proposition of "Oil as Fuel for Power and Heating Boilers" and covering various phases of the subject were presented. The authors were H. H. Fleming, F. W. Staley, John P. Leask, David Moffat Myers and W. C. McTarnahan.

Another paper by E. R. Knowles presented the subject of "Pulverized Fuel."

Discussion on Oil Fuel.

Most of the papers emphasized the present limited supply of this class of fuel, and Mr. Myers cautioned that on account of the scarcity of oil its use as a fuel should be confined to marine purposes where its advantages would do the most good.

It was pointed out that practically the only oil available for steam power and heating purposes, especially on the Atlantic seaboard, is taken from Mexican crude oil and the present uncertainty of such supply hinges on the unfavorable attitude of the Mexican government toward production and a lack of transportation facilities. American crudes, it was agreed, are too valuable for other purposes, on account of their high percentages of volatiles and lubricating fractions, to be used as fuel.

Mr. Nichols pointed to the present agitation in the New York field to change plant equipment from coal to oil burning and fought against a general adoption of such conversion, contending that the hazards attending the supply of oil fuel are too great to warrant such change.

Mr. Fleisher was also opposed to oil burning as infeasible for the United States. The life of the oil wells, he contended, is definite and we can count even the vast undeveloped fields of Mexico as limited in supply.

Mr. Barwick said the matter of boiler heights as installed for coal burning should be taken into account when considering a change in equipment to accommodate oil fuel. Generally, for coal, he said, boilers are set 24 inches from the floor, this space being divided between ash pit and combustion chamber. For burning oil, he continued, a greater height is necessary.

In closing, Mr. McTarnahan said that in the Providence and Boston fields fuel oil burning plants were being regularly supplied throughout the severe winter of 1917-18 while buildings with coal equipment were shut down. The use of oil in New England, he said, is growing daily and plans are now under way to supply the New York field with this fuel in quantity.

A motion commending the attention of the Research Bureau to the subject was carried.

Mr. Brown called attention to the fact that two sister ships plying between New York and Troy are under test, one burning coal and the other oil as fuel. They are the Hudson River steamers Trojan and Rennselaer, and anyone interested could visit them on alternate days at Pier 32 North River, New York.

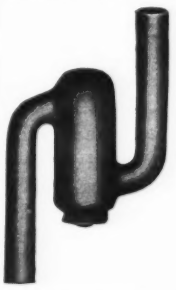
President Timmis announced the presence of Mr. Tjersland, of Christiania, Norway, a member of the society, who is in this country to secure ventilating equipment for his government.

Mr. Knowles' paper in the absence of the author was read in abstract by Secretary Obert.

The work likened powered fuel to gaseous fuel and presented the advantages and disadvantages of powered coal as fuel.

The author said powered coal is the logical method of

Our No. 6-F Youngstown Pattern Trap



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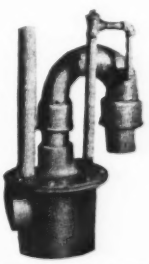

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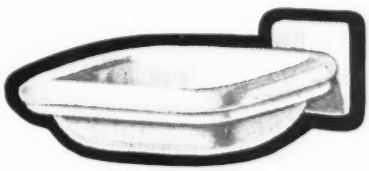

B-51 Soap Dish
4" x 6"

The cut shown here represents one of our beautiful special design bath room fittings — porcelain enamel on cast iron. An everlasting finish.

Write for catalog and discounts.

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They are made right and sold right.

Send for sample of this No. 4402 Tapered Bibb Washer. Note the rounded taper always fits.

Flexible, non-disintegrating.

WOLVERINE BRASS WORKS

Grand Rapids, Mich.

Wolverine Co., Inc. New York, N. Y.

Wolverine Brass Works, Inc. San Francisco, Calif.

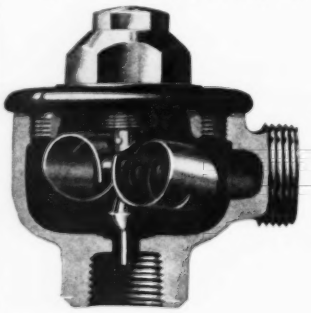
You Can Bank on This Trap

It is extremely sensitive in operation—closes positively—has no diaphragm—and is indestructible.

This Trap is a good example of the sterling workmanship and mechanical perfection incorporated in every part of the Trane Vapor Heating System and in all Trane Fittings.

This general utility trap and its allied Trane Specialties are well worth knowing all about for they are business builders.

Write today for descriptive bulletins and prices.



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Chicago, Illinois

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WISCONSIN

VICTOR
Double Drainage Shower Traps

Victor Shower Traps—"Double Drainage"—are installed by plumbers because they always carry ALL the drainage into the water pipes.

They are so constructed that a flat saving of 60% is made in the cost of installation alone, while the location of their drainage holes obviates the need for cutting holes and slots in the concrete to prevent their filling up.

Built of brass at every point where rust or corrosion is possible, VICTOR Traps cannot fail to function and therefore never cause damage.

Write today for your copy of our Booklet with all the facts.
Licensed under Patent No. 855017.

The Victor Brass Mfg. Co.
Cleveland, Ohio

securing proper combustion and such treatment of coal enables it to compete with oil on its merits.

Adjournment was then taken until 2 p. m.

Thursday Afternoon.

Major R. W. Alger, U. S. A., made an interesting address on the "Work of the Construction Division of the War Department" at the opening of the final session, Thursday afternoon. He said that the department at one time had over five hundred construction projects under way in every state in the Union, except Nevada, and costing three times as much as the Panama Canal, which it took ten years to build. The great expenditures of money for construction work, he said, were necessary, and the urgency for and the speed at which it was necessary to do it, together with the great chaos existing at Washington, when the war started with nothing on hand with which to prosecute it, should be taken into consideration before criticism for extravagance is made.

Major Alger recommended that the society take steps now looking toward the future service to the country of its members and point the way toward true preparedness of the technical men of the country.

"Tests of the Beery System of Heating and Ventilating" by C. E. Beery; "A Report of Progress in Warm Air Furnace Testing at the University of Illinois" by A. C. Willard; "Atmospheric Heating System for Railroad Cars" by Thos. H. Ireland and "Color Schemes for Distinguishing Plant Piping" by H. L. Wilkinson, were the remaining papers of the meeting presented by title by the president.

The installation of the newly elected officers closed the activities of the meeting and final adjournment was taken at 4:30 o'clock.

Entertainment.

The entertainment of the out-of-town members and ladies during their stay in New York was ably taken care of by the following committees.

Entertainment Committee: Wm. H. Driscoll, Chairman; F. E. W. Beebe, Frank T. Chapman, G. A. Dornheim, W. L. Fleisher, Samuel L. Greason, J. B. Garfield, E. F. Glore, W. F. Goodnow, W. G. LeCompte, W. J. Olvany, C. L. Riley, Arthur Ritter, Geo. G. Schmidt, P. H. Seward and B. K. Strader.

Ladies Committee:—Mrs. A. S. Armagnac, Mrs. F. T. Chapman, Miss Helen R. Innes, Mrs. George Schmidt, Mrs. C. W. Obert and Mrs. W. S. Timmis.

On Tuesday evening, while the second session was in progress, the ladies were entertained at the Capitol Theatre.

Wednesday noon found them at luncheon at the Biltmore with the New York ladies as hosts, and that evening another theatre party was the order.

The grand finale of the twenty-sixth annual meeting took place at the McAlpin Hotel in the form of a banquet and dance on Thursday evening.

A delectable menu and good music with a new record of over two hundred present to celebrate the great advancement of the society were the features.

Retiring President Walter S. Timmis was chairman. Former President Fred R. Still entertained with a recital of the high points of his recent extended visit to the Far East.

President-elect Dr. E. Vernon Hill presented a study in nomenclature, and so the designation "Ventilation" will be relegated to the background along with other discarded terms, and the fashion for the coming season will be "Airology."

Hon. W. C. Redfield, former Secretary of Commerce, in a graphic manner conveyed the simple facts of our present world relations. Charles Ferguson, who recently represented the State Department in foreign countries, presented a new view of economics.

OVERHAULING THE PLUMBING IN AN OLD COLONIAL MANSION.

(Continued from Page 280.)

will have to run nearly two hours steadily before the well is pumped empty.

"Besides, you must remember that when we first start up the pump to fill the system, we must have enough in the well to fill the tank, otherwise we will pump air into the tank.

"The pump suction pipe runs straight from pump through the wall of the spring. It will be built into the cement work. There will be a foot valve and strainer on its end, the bottom of strainer being 8 or 9 inches above the bottom of the spring. A flat pavement stone, say 18 inches or 24 inches square will be set on bottom just under the strainer to prevent any sand on bottom being sucked up into the pump.

"Of course, we won't locate this stone over any of the spring holes. I understand there are two good live spring holes at the bottom of the present well. And we will have to be very careful not to lose them as we dig down, for they are the main feeders to the well.

"The discharge pipe will be run across the well, just above the water line, and go out through the opposite wall, then up the trench. This pipe will run 2-inch clear up to the pneumatic tank at the engine room. Branches of different sizes will run from it to the mansion, barns or outbuildings, and to the grounds, and fountains.

"We will make the branch to the big house 1½-inch, to the other places they will be 1-inch or ¾-inch, as required."

"I see you show a lot of different appliances on the discharge line near the pump," said Si. " What are they for?"

"The air chamber you see is necessary to cushion the flow from pump because the line is a long one, and it would never do to start a pump full speed on a long line like that," Jones replied. "If the air chamber is kept full of air, it will let the water accumulate in the chamber when the pump starts up and the increasing pressure will gradually put the line water in motion.

"That long line water cannot be started flowing instantly. It requires time. That time is given by the air chamber.

"Of course a check valve must be placed on the discharge line on the discharge side of the air chamber. Then when pump stops working, the check holds the back pressure and gives the air chamber a chance to become recharged with air, should the pump valves leak and the contained water run back to the well.

"Between check and pump is a 1¼-inch relief valve. That is really a safety valve. It will be set for 100 pounds and will blow off water should the pump continue working after the tank pressure rises above 85 pounds or so.

"Something may go wrong with the automatic pump control, or somebody may shut the valve on discharge line, and then the relief valve will be a safeguard. The gate valve you see on discharge line, is only to shut off the water in the line at any time that repairs are required at the pump. Otherwise it will always be open.

"As for the masonry work—well, that's easy. All the mason has to do is set his forms in the hole we will have dug for him, then pour in his concrete. The walls, roof and all will be cement concrete, re-enforced with twisted ½-inch iron bars crossed on 12-inch centers.

"We will insert a wood frame and insulated door with brass hinges and lock for access to the pump compartment And the large opening that will be left in the spring wall will afford access to spring from pump compartment.

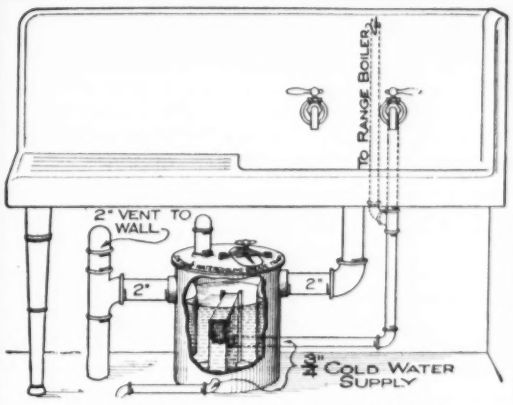

Fig. 113—"AcmE" Water Cooling Grease Trap. A satisfactory installation.

Dehn's Sanitary Safeguard

The Quality Goods

Compound Injector & Speciality Co.

1897 Originators, Designers and Sole Manufacturers of 1920

Dehn's Sanitary Safeguards

419-421-D-N. Laramie Ave., Chicago, Ill., U. S. A.

HORIGAN'S AQUA EXPANSION TANK

THE FUEL SAVER!

It's LOTS BETTER than the regular "2 for 1" proposition.

Coal Is 2—Radiation 1!

It takes two tons of soft coal to heat each 100 ft. of radiation a season in the average Hot Water Job, therefore, if the radiation can be INCREASED without ADDING to the FOOTAGE, or in other words, the temperature of the water raised above 180 degrees and HELD there, something that is done with our AQUA TANK, it being increased at least from 40 to 60 degrees and HELD, makes a **Big Difference in the Coal Pile!**

Therefore, the ratio falls from "2 to 1" to "1 1/3 to 1,"—A **BIG DIFFERENCE!**

Do you get us? or, in other words, 1 1/3 tons of soft coal takes care of each 100 ft. of radiation, in most States, per season.

Price $35.00 Net, F. O. B. cars, St. Joseph, Mo., with full freight allowed to any railway station in the United States.

HORIGAN SUPPLY CO.

415 South 4th Street **St. Joseph, Mo**

CLEVELAND FLUSH-VALVE

Simple Sanitary Satisfactory

Designed for general use, and especially where hard usage is unavoidable. Lever or push button action.
Write for our Special Sample Valve Offer.

Cleveland Flush Meter Company, Noble Court and W. 2nd St. Cleveland, Ohio

KINSEY & MAHLER CO.

Manufacturers and Jobbers of

Iron Pipe and Fittings, Plumbers' Materials, Steam and Gas Fitters' Supplies, etc.

COPPER AND BRASS WORK

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The Plumbers and Steam Fitters **Price Guide**

With Price Revision and Market Bulletin Service Gives You "Up-to-the-Minute" Price Information

Write for Particulars

BAREHAM & SAUNDERS 366 East Main Street, ROCHESTER, N.Y

No More Sizzling Air Valves

The Holmberg Vacuum Vapor Steam Trap, attached to any single pipe steam job, will eject all the air. Save 30% in fuel, and increase the efficiency 30%.
Capacity of each Trap, One Thousand Feet. No other specialties required. Order from your jobber, or direct from factory. Send for particulars.

The Holmberg Steam Trap Co.,
Lindsborg, Kansas

STAR NACO BOILER

DOUBLE SEAL WELDED AND RIVETED

The Sturdiest Range Boiler Made

SEND FOR CATALOG

Detroit Range Boiler & Steel Barrel Co., Detroit, Mich.

Branches: New York San Francisco Chicago St. Louis
Plants: Toledo Detroit

¶ If you want a salesman, foreman or workman, advertise in the Classified Department of "*Domestic Engineering.*" Used by the best houses in the trade.

"Sirocco"

TRADE MARK

Let Sirocco Engineering service solve your ventilating, heating and cooling problems. Send for catalog.

American Blower Company

Detroit, Mich.

SAACO

Did you read our half-page advertisement on the SAACO Sand Trap in the January 31st issue of "Domestic Engineering"?

SANITARY CO. OF AMERICA
LINFIELD, PA.

"The spring will have a 2-inch overflow and pump compartment floor will have a 2-inch floor drain, too.

"That should make a complete outfit. The only attention it will need is a few minutes each month for oiling.

"There will be a hand switch at the pump to shut off the current any time the pump is undergoing repairs. This switch, however, will be thrown in all the time of service, the control or operating switch being up at the engine room. Now I think that is all clear—go ahead and ink it in, giving all necessary dimensions."

NEWS FROM ALABAMA.

A war on the owners and real estate men has been declared by the city health department of the city of Birmingham, Ala., in an effort on the part of Dr. J. D. Dowling, city health director, to force the former to install better and more sanitary plumbing in their buildings. Speaking of these conditions Dr. Dowling is reported to have said: "Every report of every inspector and every personal tour that I make, convince me that we must speedily eliminate the primitive conditions now prevailing in certain parts of Birmingham. I find conditions bad, very bad, in many quarters. I find inadequate sanitary connections and facilities, bringing into existence one of the most dangerous disease-breeding agencies ever seen anywhere.

"There is a spirit of opposition to the enforcement of the sanitary and health laws of Birmingham that must be broken. Real estate interests must be made to understand that private gain must be subordinated to the public welfare.

"It has been said that I cannot, and that my department cannot, enforce these laws. If that is true, then the public health department of Birmingham and Jefferson County might as well close its offices and quit, for it will have been a failure.

"However, it is not true. We are going to make the city as healthful as modern plumbing and sanitation will make it, and those who will not conform to the established regulations decently and in order will be forced to do so by aroused public opinion and court orders."

PROVINCE OF ONTARIO.

Ottawa and Vicinity.

A movement by local master plumbers to have the contractors in other trades negotiate new wage agreements with their workmen now instead of waiting until May 1st, so as to provide every opportunity for a good start to building operations, has been successful, and from present indications strikes will be few in Ottawa in the Spring. The building trades in general are now negotiating with this same end in view.

The repair jobbing is being well maintained by the trade in this vicinity, although there is some falling off in the awarding of contracts for public buildings. Repairs mainly to heating systems, were very active through the recent spell of very severe weather.

W. G. Edge, Ltd., which has underway several large local contracts, including the heating system in the new Parliament buildings, has branched out and has taken contracts in both Montreal and Toronto.

WE FIDDLE AND FIDDLE WHILE ROME BURNS!

A Statement on the Times by John S. Capper, President, Capper & Capper.

THE world is hungry for the things we eat, wear and use. Stark Hungry! The cupboard is bare as a bone. Prices mount to staggering figures and the cry of our worker is—more pay; shorter hours—and then a shortage shoots the price of things up another notch; again the cry—more pay; less hours.

Ye Gods! Must the vicious circle continue? Shall we never see that it is more hours we need, that to reduce the cost of the things we use, we must produce not less but more?

I just received a cablegram from my brother in London, reading, "Market bare, prices awful, hopeless, sailing home. Oh, if Americans would grasp their opportunity."

Prices had gotten so high in this country and merchandise so scarce, we sent two of our firm abroad, hoping to find what we needed and at lower prices. The cable message is the answer! Merchandise is even shorter on the other side than here. They have nothing to sell and their shelves are bare. They want to buy, to buy from America—to buy the things that Americans make—and the answer of our workers is—reduce our hours—44 hours a week instead of 60—a cut in production of 25 per cent.

The writer sympathizes with those who work. He understands what hard work, privation and the struggle of life is—he has lived it. He has walked eight miles a day to earn fifty cents, carrying water for the workers who built the town of Pullman. He has gotten out of bed at 3 o'clock to milk 15 cows on a Winter's morning. He has put in 15 hours a day in a store. He is not a natural born plutocrat; rather—he is the son of a steel worker. He feels that he knows the needs of those who struggle, but anyone would be indeed foolish who failed to see that the waste of time of workers raised the price of the very clothes that he himself wore, and everything used by him or his fellow worker.

Short hours in the city has made the farm worker restless; he, too, wants short hours and increased pay. May Kind Providence preserve us if farm workers ever insist on 44 hours per week, or an eight-hour day. You and I, my friend, will go hungry. I farm 800 acres and I know what short hours in the city are doing for the farm.

We may keep high wages, we may keep our present scale, and still reduce the cost of living by a simple remedy—work—good, hard, honest, faithful service—not 8 hours, rather 10 and then some.—Let us for one year, at least, resolve to work, and work in earnest.

Brass and Copper Tubing

Seamless Drawn

Iron Pipe Sizes—Special Mixture if Desired

Crescent Brand Tubing is used exclusively in Wheeler Condensers. It is of special value to the plumbing trade. When QUALITY tubing is wanted always specify CRESCENT Brand.

Wheeler Condenser & Engineering Co., Carteret, N. J. 47

STERLING STEALING SYSTEMS **SYSTEMS**

Vacuum and Vapor Heating Specialties

Thermostatic Traps—Air Line Valves—Graduated Supply Valves—Air Eliminators—Damper Regulators

STERLING ENGINEERING COMPANY

Milwaukee Wisconsin

Fig. 100—Steel Floor or Ceiling Plate

CENCO

Floor and Ceiling Plates

Pipe Hangers, Clamps and Specialties

Write for New Catalog and Prices

C. ERWIN NORMAN & CO.

Manufacturers

14-16-18 W. Kinzie St., Chicago, U.S.A.

"Standard" Plumbing Fixtures

Permanent exhibits in the following cities:

NEW YORK	EAST ST. LOUIS	WHEELING	NASHVILLE	KANSAS CITY
BOSTON	CLEVELAND	HUNTINGTON	NEW ORLEANS	SAN FRANCISCO
PHILADELPHIA	CINCINNATI	ERIE	HOUSTON	LOS ANGELES
WASHINGTON	TOLEDO	ALTOONA	DALLAS	DETROIT
PITTSBURGH	COLUMBUS	MILWAUKEE	SAN ANTONIO	TORONTO, CAN.
CHICAGO	CANTON	LOUISVILLE	FORT WORTH	HAMILTON, CAN.
ST. LOUIS		YOUNGSTOWN		

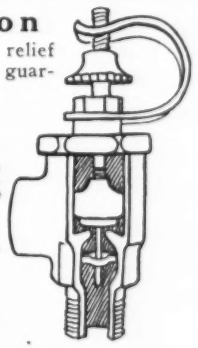
Standard Sanitary Mfg. Co., Pittsburgh

Positive Action

is an important feature in a relief valve. This point is positively guaranteed in the

DONNELLY

Hot Water Relief Valve



Spring is located on **outside** where it will not corrode from dirt, sediment and water. Also prevents spindle inside from sticking.

Tested to 150 lbs. water pressure.

Made of steam bronze mixture.

Make your hot water installation safe—install the Donnelly Valve.

Order from your jobber.

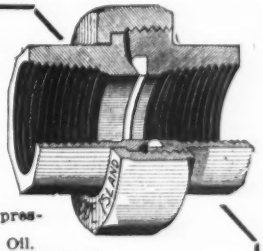
DONNELLY MFG. CO.

29 Mills Street, Malden, Mass.

We also make the Donnelly Automatic Vacuum Valve

Rhode Island Union

Positive Joint
Bronze Seat
No Packing
No Gasket



Guaranteed 300 lbs. working pressure.

For Steam, Water, Gas and Oil.

The best is cheapest in the end—use the

RHODE ISLAND

Write for Catalog.

RHODE ISLAND FITTINGS COMPANY

HILLS GROVE, R. I.

Install a **Paul Yoney Maker Demonstrator** in your show window and watch the crowds gather.

It is a complete water system which you may demonstrate to your customers under actual service conditions.

Write us for full particulars.

Fort Wayne Engineering & Mfg. Co.
1712 Harrison St. FORT WAYNE, IND.

Here's The Farnsworth Double-Action Feeder!

The Farnsworth Duplex Boiler Feeder is the only machine of its kind on the market for returning condensation to boilers under pressure at a high temperature. It feeds **continuously**, one chamber feeding while the other chamber is receiving.

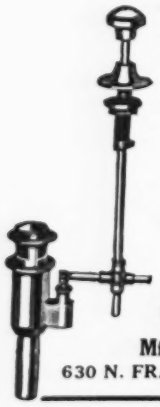
There are 12 styles and 25 systems—one to handle the condensation problem at your plant.

WRITE FOR CATALOG

This shows the machine which is saving steam plants from 1 to 10 tons of coal per day.

"The greatest coal saver ever offered the steam plant."

FARNSWORTH CO. Conshohocken, Pa.
Engineers and Manufacturers of Condensation Pumps



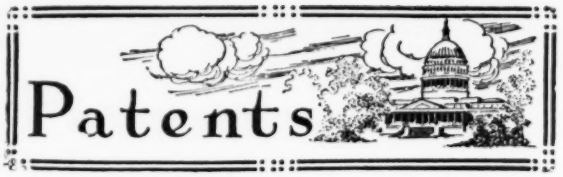
The ALLINGHAM
DIRECT LIFT
Pop-Up
BASIN WASTE
The Old Reliable With an Established Reputation
Manufactured by
GOETZ BRASS CO
Mfrs. Plumbing Brass Specialties
630 N. FRANKLIN ST. CHICAGO, ILL

Tank Fittings of Quality

1856 **"McSHANE"** 1919

The ORIGINAL Compound Lever Ball Cock Elevated, Low-Down, Top and Bottom Supply Tank Levers and Valves.

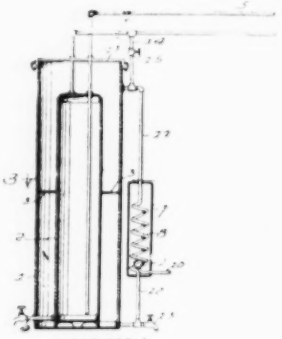
McSHANE BELL FOUNDRY CO.
BALTIMORE, MARYLAND



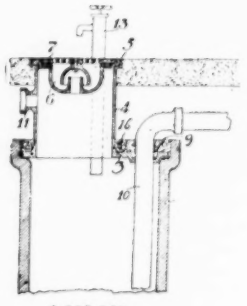
Plumbing Department.

1,328,608. Hot Water Boiler. William J. Woodward, Leetonia, Ohio. In a device of the kind set forth, a pair of boilers comprising an outer boiler and an inner boiler, means for connecting the inner boiler to a pressure main, a water heater, connections between the water heater and the upper and lower ends of the outer boiler whereby a circulation may be set up in the latter, a valve controlled connection between said means and said connections, and drains for both boilers.

1,328,262. Cover for Floor Sumps. Edward W. N. Boosey, Detroit, Mich. A cover for sumps consisting of a base member having flanged apertures adjacent one side for calking of a pipe member thereto and an integral tubular portion positioned eccentrically of the cover and opening therethrough, the said tubular portion being adapted to receive an apertured cover, and a trap reservoir therebeneath.



1,328,608.



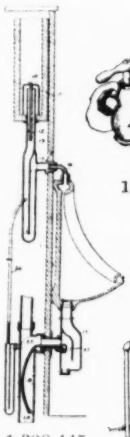
1,328,262.

1,328,445. Apparatus for Flushing Urinals. Dudley Newton, Berkeley, Cal. The combination of a flushing tank, an air container therein having a closed top and an open bottom communicating with the remainder of the tank, means for maintaining a normal level of water therein, a conduit leading from the air container, a trap to which said conduit leads, a receptacle for receiving liquids, a siphon communicating with the receptacle, and a second conduit between the trap and the siphon.

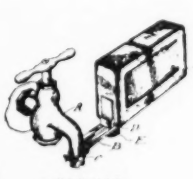
1,328,528. Soap Holder. Frank Leach, Detroit, Mich. In a device of the class described, a relatively long, narrow, bar having a fixed laterally directed arm at one end, said bar having a longitudinal slot therein, a movable arm parallelizing the aforesaid arm and having working fit in said slot of the bar, the inner end of the second-mentioned arm having a screw-threaded socket therein, a thumb screw projecting through said slot and working in said socket to clamp said movable arm at various adjusted positions on the bar, the opposed faces of said arms being serrated throughout their entire lengths so as to provide relatively long, narrow spaced teeth to bite into the soap and thereby hold the soap against twisting or displacement laterally of said bar and to maintain the soap clamped between the arms in contact with said serrations until the soap is used down to the plane of the bar, and an attaching means carried by the bar.

1,328,649. Anti-Freezing Appliance for Water Pipes. Thomas A. Davis, San Antonio, Texas. In an anti-freezing

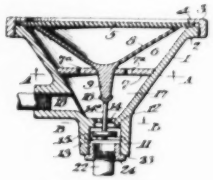
appliance for water pipes, a casing, a partition dividing the casing into upper and lower chambers and having water ducts connecting the chambers, an induction valve chamber below the lower chamber and connected with an induction pipe, an eduction pipe connected with the lower chamber, a check valve loosely contained in the valve chamber and having a stem projecting into the lower chamber, a displaceable cover attached to the casing, an abutment held by the cover for the valve stem to maintain the valve in open position under induction water pressure pending the displacement of the cover.



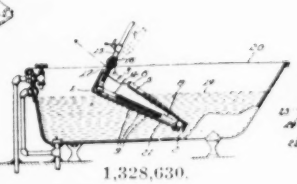
1,328,445.



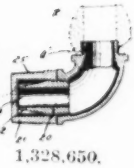
1,328,528.



1,328,649.



1,328,630.



1,328,650.

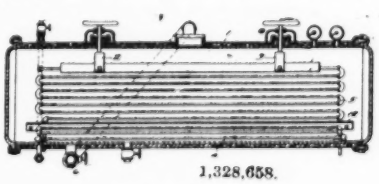
1,328,630. Floating Heater. Samuel M. Kass, Philadelphia, Pa. A heater comprising a chamber weighted at one end and adapted to float in an inclined position in a liquid to be heated, and a heating means in said chamber adapted to convey its heat to the liquid through the chamber.

1,328,650. Combination Bath Spray. Jerome J. Donovan, Oakland, Cal. A device of the character described comprising a tubular coupling member having external threads shaped to engage complemental threads of a faucet, and a cap having internal threads engaging the threads of the coupling member.

1,328,694. Solder for Aluminum. Julian Segura, New York, N. Y. A solder for aluminum composed of lead ranging from 75 to 95 parts; tin ranging from 185 to 205 parts; zinc ranging from 185 to 205 parts; antimony ranging from 5 to 20 parts and white metal ranging from 5 to 25 parts (the composition of the white metal ranging from 80 to 90 per cent tin, 5 to 15 per cent antimony, and 3 to 10 per cent copper).

Heating Department.

1,328,658. Process of Drying Lumber. Frederick K. Fish, Jr., New York, N. Y., assignor to Lumber Tie & Timber Vulcanizing Co., New York, N. Y. The process of extracting the fluid content of wood and substances



1,328,658.

contained therein, which consists in associating with the wood a heat radiating medium; then sweating the wood; then subjecting the wood to a body of steam under pressure; then creating around the wood a partial vacuum; then submerging the wood in superheated water; then

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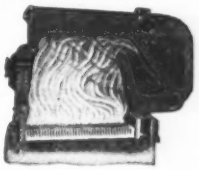

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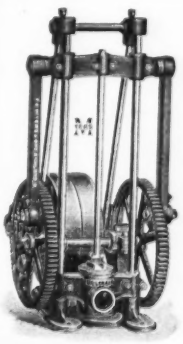

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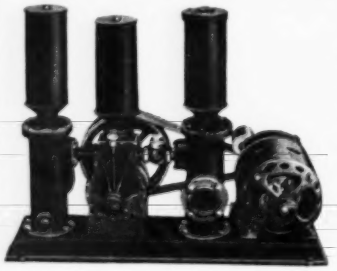

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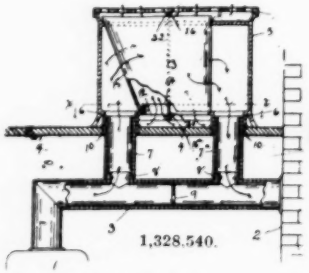
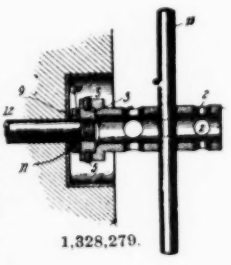
FRANKFORT, INDIANA

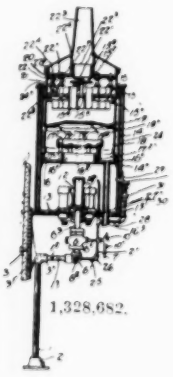
again creating a vacuum around the wood; then subjecting the wood to dry heat of high temperature; then subjecting the wood to a moderately heated, moist atmosphere.

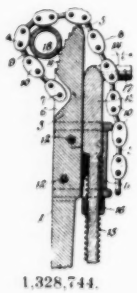
1,328,540. Waste Heat Radiator. James E. Nute, Portland, Me. In a device of the character described, the combination with a heater and smoke funnel having a partition therein, of an air tight radiator having intake and exit openings in the bottom thereof connected with said funnel, one on each side of said partition, a removable air chamber mounted in said radiator between said openings and open at the top and bottom and means for locking the air chamber to the radiator.

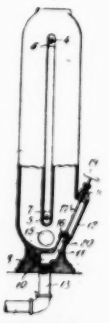

1,328,540.


1,328,279.

1,328,279. Die Holder. Joseph Grauer, Brooklyn, N. Y. In a die holder, a housing provided with a recess at one end and leverage means at the other, a die adapted to be securely held in said recess, a guide, a guide holder provided with means for holding said guide, said guide holder being also provided with jaws adapted to fit over said die and means for securing the said guide holder and accompanying guide in position over the said die.


1,328,682.


1,328,744.


1,328,789

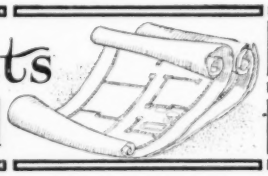
1,328,682. Hot Water Heater. Frederick William Magee, London, Ontario, Canada, assignor of one-half to Thomas William Baker, London, Ontario, Canada. An instantaneous heater comprising a cylindrical casing, a dished head at the upper end of the casing into which the water supply is discharged, a multiplicity of nipple tubes carried by and arranged evenly throughout the whole surface of the head and passing through the bottom of the dished head and projecting above and below such surface and having perforations in the upwardly projecting portion in proximity to the head.

1,328,744. Pipe Wrench. John E. Lenholt, Leete Island, Conn., assignor of one-half to Charles R. Tainter, Guilford, Conn. A chain pipe wrench comprising a handle member with a jaw at one end, a chain secured at one end directly to the handle member adjacent to the jaw, and a claw on the other side of the handle member for receiving and holding the other end portion of the chain, said chain comprising a series of alternate solid flat links and ring-

shaped links, with the flat links arranged for edge engagement with the work.

1,328,789. Radiator. Patrick H. Cusick, Oregon, Wis. A radiator, comprising a plurality of connected end and intermediate sections, each end section having an enlarged, solid pedestal integral therewith and adapted to rest directly upon the floor, tie rods holding said sections together the base of one end section having extending through it a passage for the heating medium which opens at its lower end through the under face of said pedestal and communicates at its upper end with the circulation space within the said section, the lower portion of said passage being designed to receive the projecting end of a transmission pipe for the heating medium.

Contracts Awarded



Urbana, Ill.—Ray Gallagher was the successful bidder for the plumbing and heating contracts on the new $400,000 hotel building to be erected at Muncie, Ind. The building will contain 150 rooms and have modern equipment throughout.

New York, N. Y.—Jacob Jarcho, 22 East 105th Street, has been awarded the contract for the installation of modern plumbing in the $2,000,000 bank and office building to be erected for the Gotham National Bank, at 303 West Fifty-ninth Street.

Bridgeport, Conn.—L. H. Mill, 32 Middle Street, will install plumbing and heating in the $60,000 residence to be erected for Harris R. Childs, at Southport.

Brooklyn, N. Y.—Harry Sugarman, 1003 Boston Post Road, has secured the contract for the installation of plumbing in the $150,000 factory to be erected for the Metal Hose & Tubing Co., at Raymond Street and Park Avenue.

Boston, Mass.—The Cleghorn Co., 54 Batterymarch Street, has secured the contract for the installation of heating in the $170,000 school to be erected at Framingham, Mass. J. A. Murphy, Framingham, will install the plumbing.

Baltimore, Md.—Wm. E. Wood & Co., 18 North Howard Street, have secured the contract for the installation of heating in the $65,000 show room and garage to be erected for the Howell Motor Co.

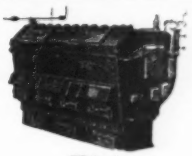
Cleveland, O.—W. Mishler, 12204 Woodland Avenue, will install the heating, and H. Potter, 11910 Woodland Avenue, the plumbing in the three two-story residences to be erected for H. F. Redick.

Cleveland, O.—Robert E. Harlock, 8010 Keyes Avenue, has secured the contract for the installation of plumbing in the $100,000 factory to be erected at Taft Avenue, near 131st Street, for the Briggs Mfg. Co.

Detroit, Mich.—Stella Bros., 1818 Twelfth Street, have been awarded the contract for the installation of plumbing and heating in a new residence and garage, to be erected for Thos. R. Sharp, at 1004 Philadelphia Avenue.

Milwaukee, Wis.—The Wm. H. Egan Co., 176 Biddle Street, has secured the contract for the installation of plumbing in the $15,000 residence and garage to be erected at Hi Mount and Vine Streets.

Alliance, Ohio.—Charles W. Swanson has sold his interest in the firm of Swanson & Bissler, 167 East Main Street, to Ed. J. Bissler, who will continue the business.



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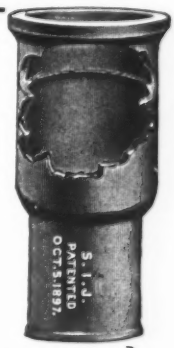

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PLUMBERS AND STEAM FITTERS wanted for the Sunny South. Open shop conditions in an open shop town. Wages $1.00 per hour, eight hour day. Must be first class mechanics. Pettit-Galloway Co., 114 E. Seventh St., Little Rock, Ark. tf

WANTED—TWO MORE A1 PLUMBers. Open shop. $8.50 per day. Steady married men preferred. Fine chance for the right men. Plenty of work the year around. This is one chance in a lifetime if you mean business. A. E. Olson, Colorado Springs, Colo. 2-7-14

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SALES MANAGER WANTED — WE have a position open for a first class man who has a thorough knowledge of plumbing, steam heating, pump and windmill supplies. Good opportunity for the right man. All applications considered strictly confidential. Plumbing Supply Co., Sioux Falls, S. Dak. 1-31—2-20

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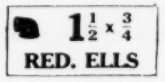
Miscellaneous.



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